

**Materialities of clinical handover in intensive
care: challenges of enactment and education**

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Table of Contents

Abstract	1
Acknowledgments.....	3
Chapter 1 Situating Handover	5
Introduction	6
24/7: night and day	10
Structure of thesis	16
Chapter 2 The Literature Review	20
Introduction to the literature on handover	20
Medical training and education	23
Nursing training and education.....	25
Clinical handover.....	26
Handover and the social	27
Handover: sacred and profane	35
Handover in industry.....	36
Handover in Intensive Care	40
Handover and the material	44
Handover and geography.....	50
Handover and the person	54
Research questions and conclusions from the literature review	55
Chapter 3 Methodology	57
Introduction	57
Research methodology and finding the research philosophy	58
Actor-Network Theory.....	62
Research approach: mixing the methods	65
Selection of the research subject and the place	70
The research context: detailed consideration	71
Research design, participant selection, data collection and data generation	73
Participant selection	75
Data collected	78
Images and words	79
Boards without meetings.....	81
Transcription	82
Ethical considerations.....	82
Informed consent and power	85
Confidentiality.....	86
Storage of Data	87
Outcomes.....	87
Analysis of the data: how I got to now.....	87
Reflexivity.....	90

The environment which we have taken for granted	92
And finally (from the beginning)	94
Conclusions	95
Chapter 4 Handovers in Practice in Intensive Care	96
Introduction	97
Handovers in intensive care	97
Handover of the ICU from nurse in charge to nurse in charge	105
Handovers in the doctors' room	113
Death arising in handover	132
Handover nurse to nurse at the bedside	137
Conclusions	149
Chapter 5 Assemblages and Agencies of Handover	151
Introduction	152
Talking handover	152
What can the patient say?	152
Patients enacted through verbal handover	154
How is the person enacted through the free text of typed admission comments?	178
Care enacted by staff of staff	186
Them and us and outliers: the hospital others	191
Learning in handover	203
What happens after handover?	206
Conclusions	208
Chapter 6 Conclusions and Recommendations	210
Introduction	211
Implications for professional practice	215
Implications for professional education	217
Signposting future research	219
Conclusions	223
References	225
Appendices	239
Appendix 1 Participants in the research	239
Appendix 2 Ethics consent form	240
Appendix 3 Wardwatcher data	241

Abstract

The research is situated in a busy intensive care unit in a tertiary referral centre university hospital in Scotland. To date no research appears to have been done with a focus on handover in intensive care, across the professions involved, examining how handover is enacted. This study makes an original contribution to the practical and pedagogical aspects of handover in intensive care both in terms of the methodology used and also in terms of its findings.

In order to study handover a mixed methods approach has been adopted and fieldwork has been done in the ethnographic mode. Data has been audio recorded and transcribed and analysed to explore the clinical handovers of patients by doctors and nurses in this intensive care unit. Texts of both handover, and the artefacts involved, are reviewed. Material from journals, books, lectures and websites, including those for health care professionals, patients and relatives, and those in industry are explicated. This study explores the role of material artefacts and texts, such as the intensive care-based electronic patient record, the whiteboards in the doctors' office, and in the ward, in the enactment of handover. Through analysis of the data I explore some of the entanglements and ontologies of handover and the multiple *things* of healthcare: patients, information, equipment, activities, texts, ideas, diseases, staff, diagnoses, illnesses, floating texts, responsibility, a plan, a family. The *doing* of handover is framed theoretically through the empirical philosophy of Mol's identification of multiple ontologies in clinical practice (Mol, 2002). Each chapter is prefaced by a poem, each of which has relevant socio-material

elements embedded in it. The significance of the findings of the research for both patient care and clinical education and learning is surfaced.

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Angus Ogilvy has given permission for the inclusion of his poems. He has produced a book of poetry *Lights in the Constellation of the Crab* very much based on his experiences as a patient with Non-Hodgkin Mantle Cell Lymphoma. All proceeds from the book go to Maggie's Cancer Caring Centres and the book can be sourced through hermitcrabpoems@gmail.com

Chapter 1 Situating Handover

State of the Art

*It's the state of the art. He's surrounded by
the attendant forms of programmed machines.
Stooping before him their console heads bowed
with functionary, charted smiles,
they proclaim his ongoing god-given right to live
with a fanfare of obsequious bleeps.
They've no authority to recognise
he's always otherwise detained in sleep.*

*I approach him in his realm of tubes
and wires, pressure gauges, ventilators,
urinary catheters, drips and bags.
My fingers fresh with rubbed in alcohol,
I cup his hand below the cannula
and brush my lips in tribute with a kiss.*

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Introduction

This is a study of how clinical handover is enacted in intensive care, and the implications for professional practice and education. It is situated in an intensive care unit (ICU) in a Scottish tertiary referral centre university hospital. Handover is the act, the praxis, where a patient or patients are passed on from one clinician or group of clinicians to another. It is ubiquitous in all of clinical practice and is happening all the time across all sectors of the healthcare system.

Handover has been identified, by amongst others (Mukherjee, 2004), in a normative sense, as a gap, a rupture, an interruption in the thread that is the patient's progress through their illness or, in this case, the hospital system. It may be more helpful to position handover as a connection point, perhaps envisioned as the eye of the needle, through which the linkages of a jumble of networks connect, linkages of adjacent, even overlapping, assemblies. It could also be realised as a place of concatenation, of holding together and hosting these linkages. Both the difficulties and the possibilities of traversing that gap, getting through the eye of the needle, are indications, if not evidence, of handover's very existence. The multiple *things* of healthcare are involved. A patient, machines, buildings and rooms, information, activities, texts, ideas, a disease, a diagnosis, an illness, staff, responsibility, a plan, a family. And care and the person. There are important reasons to research into handover in intensive care. The nature of critical illness renders the patient's condition complex, as are the relationships with all of the things which have just been mentioned. Intensive care exposes many of the most vivid and concentrated of human experiences dealing as it does with life on a knife-edge, and inevitably

with death. The enaction of this through the material and social forces involved is of great interest. These factors, facets, agents are all brought together in handover to create an obligatory passage point as developed by Callon (Callon, 1986). How they enact the practice and the patient in this context is previously an unknown.

Intensive care and handover

So let us look at the nature of intensive care, the patients and staff and how handover itself happens there. The intensive care unit is, physically, a specialised ward where the sickest, most unstable patients in the hospital are cared for. It provides patients with round the clock access to vital organ system support: respiratory, cardiovascular, renal, neurological, nutritional and so on. It also comprises a team of people, the intensive care staff, who work inter-professionally to provide the patients with that support and care. In the unit where this study was undertaken there are sixteen beds staffed by 101 or so nurses and care assistants, and around eighteen medical staff and advanced critical care nurse practitioners. It is common practice for staff referring patients from around the hospital to *call the ICU* and ask the question “do you have a bed?” (Image 1.1: the main ward area). What they know is that the patient will receive active treatment and support from these staff if admitted to an intensive care bed. They are also (usually) aware that the resources are not infinite, so in order to get the best for their patient there needs to be space for them. When intensive care units first developed the emphasis was on this space and the physicality of the unit: putting all of the sick patients in one ward. Development of the clinical specialties of intensive care medicine and nursing followed later,

but for many staff the focus still remains on the physical and geographical ward area.

And these patients, who are they? Foucault might have them as “a collection of separated individualities” (Foucault, 1977, p.201). They come to intensive care because they need support for their deranged physiology. They are not breathing well and have critically low levels of oxygen in the blood. They have low blood pressure compromising the life sustaining flow of blood round the body to the vital organs. They are in coma and not protecting the airways from the mouth to the lungs with a consequent reduction in oxygen getting into the blood or they have kidney or liver failure, sepsis or multiple trauma. And they need treatment for the underlying diagnosis: septic shock from a bowel perforation requiring surgery and antibiotics; coma due to subarachnoid haemorrhage from a ruptured intracranial aneurysm which needs to be secured; pneumonia, following chemotherapy for lymphoma, requiring antimicrobial therapy. They have both a reason for admission, requiring support and a diagnosis requiring treatment. Both of these elements are delivered simultaneously, and without interruption, by a variety of staff covering every twentyfour hour period. A crucial component enabling this to happen is by staff *handing over* the patient from one shift to the next. Some patients will be in the unit for twenty four to forty eight hours, the majority for four to fourteen days and a significant minority for weeks or even months. As you accrue more intensive care *air miles* you are also accumulating more and more changes of shift, with the attendant issues of multiple handovers.



Image 1.1 Main ward area, intensive care

Intensive and high dependency care in the UK has evolved in a stuttering and loosely coordinated fashion over the last fifty to sixty years. As an example, although it may appear steeped in folklore, in 1985 there were four intensive care beds and four renal high dependency beds serving South East Scotland (Fife, Borders, Lothian, Forth Valley). There are now at the least one hundred and thirteen intensive care and high dependency beds supporting the same geographical area, with each health board making independent plans on local developments. Again the focus is often on the physical *unit*, with the staff a secondary consideration. The unit where this study was conducted was designed with no input from intensivists, doctors specifically trained in care of the critically ill, and the staff were recruited after the ward had been commissioned and built. This may, in part, explain how the working practices of

handover have come into being in the unit and why the different handovers happen where and how they do.

24/7: night and day

In order to help understand the context and findings of this research I provide a description of how intensive care happens in this place. The intensive care unit never closes. Visualise the unit of the night with its dimmed lights, drawn curtains, hushed voices, locked entry doors and skeleton staff (a full compliment of nurses but only one or two doctors/advanced critical care nurse practitioners). Contrast this with the hurly burly of daytime, lights and action full on (Image 1.1 Main ward area). The domestics are cleaning the floors of the corridors and the ward. The blood gas machine (which measures oxygen, carbon dioxide and acids in the blood), having worked hard analysing patient blood samples for the last twenty four hours, receives its well deserved daily service, the biochemist tinkering within its innards. During that machine's *down* time the patients are rendered even more vulnerable than at other times as there are no blood gas analyses or lactate or potassium measurements available. Xray machines are being trundled to the bedsides. Visiting surgeons and physicians do rounds trailing their varied entourages. Indigent pharmacists and physiotherapists interact with patients and staff alike and there are students everywhere. Noise is all pervading: phones, bleeps, chat, the strident alarms of the ventilators and the monitors. Curtains are drawn around beds, hair is being washed, treatment is being applied; *care* is being given. At the same time, in a closed room, the charge nurses are handing over all of the patients in the unit and in another *black box* of a room the doctors' handover the same group of

patients from one shift to another. At 16 bed spaces nurses hand over individual patients to other nurses, side by side, some in virtual silos, and others in single room physical silos. Fenwick suggests that workplace learning focuses on “interrupting black boxes of practice to hold open their controversies and disturbances” (Fenwick 2014, p.51) “. It could therefore be of interest to explore what the practices, languages and materialities of critical illnesses and the patients being enacted in these situations are?

In this intensive care unit the clinical team is led by a partnership of two senior clinicians: the nurse-in-charge and the on-duty consultant. In traditional nursing practice, as Lelean showed, the ward would be handed over by means of the Nursing Report involving all of the staff on the ward (Lelean, 1973). However, contemporary practice includes a one-to-one handover of the intensive care unit by the nurse in charge, and by the consultant, *on* to their respective replacements. Each of these individuals receives a separate handover of the unit from the appropriate outgoing colleague. They then work together for a set amount of time depending on their rosters. The bedspace nurses do individual one to one handovers. Three separated handovers have developed resulting from a necessity of the structure of care which is described below. The cohesive management of this group of critically ill patients relies heavily upon interactions between large numbers of people. These include staff and patients, and patient’s relatives and friends, and particularly on the interaction of the duty consultant and the nurse in charge and their interactions with the nurses at the bedside and the medical staff *on the floor*. Having said that, although there is a shared or collective responsibility it is still clearly signalled by the General

Medical Council that the *ultimate* responsibility for the patient lies with his or her medical consultant, (Good Medical Practice, 2013).

Although nurses constitute the largest staff group in intensive care by orders of magnitude, the consultant is the one held to account. Along with caring and curing there is final responsibility. Indeed in intensive care it is even more complex. The patient remains *under* the referring consultant(s) continuously, as well as being the responsibility of the intensive care consultants who hand over all of the patients from shift to shift. Responsibility is therefore jointly held by the individual intensivist from hour to hour (therefore collectively) 24/7 and by the specialists over a time when there are many changes in intensive care staffing resulting in multiple handovers. In the 1990s, the previously mentioned, somewhat haphazard proliferation of intensive care and high dependency units came under the scrutiny of the UK Government and the devolved administration in Scotland, largely due to concerns generated over winter bed pressures. For many years in the NHS there have been seasonal increases in the numbers of emergency admissions over the winter months and this has resulted in an excess of patients for available beds. This has led to premature discharges and boarding of patients away from specialist units eg patients with pneumonia being admitted to surgical wards. The pressure to admit patients to intensive care can be enormous leading to patients being discharged overnight, or transferred to other hospitals. Both of these have been linked to increased morbidity and mortality (Wallis, 2003). Following consultation White Papers were produced: *Comprehensive Critical Care* in 2000 from the Department of Health in London and from Scottish Government one year later (*Better Critical Care*, 2001). These tell an interesting story in themselves, about the creation of

critical care and about the categorisation of patients (people) according to their requirement for measurable and definable organ system support. Critical care is the term for departments and services incorporating both intensive care and high dependency care. Although a detailed analysis of these policy documents is outwith the remit of this study, an understanding of the overall content is necessary to the understanding of much of the raw data from the handover recordings and to the theme of inter-professional working in intensive care which will be developed. In particular, an appreciation of what the *level/s* system means (and why it was developed) is helpful.

Comprehensive Critical Care starts:

“Comprehensive critical care is the complete process of care for the critically ill which focuses on the level of care that individual patients need rather than on beds and buildings. The current provision of critical care is characterised by considerable variation in organisation and delivery, quality, funding and effectiveness. This situation is largely the product of historic legacy and ad hoc development. It is compounded by difficulties in the recruitment and retention of the necessary trained staff and in professional training and development programmes that do not match the needs of individuals or the service; this is particularly the case for nursing staff. Comprehensive critical care is not simply a new name for intensive care, but is a new specialty based on severity of illness – caring for those who are critically ill or vulnerable to critical illness. As such, the proposals represent a substantial change in direction. Successful implementation depends on breaking down the barriers between specialties and

professions, to focus on the needs of patients. We have found a recognition amongst critical care professionals that the doors of the intensive care unit need to be unlocked, and partnership between professionals and patients form the basis for the service” (Comprehensive Critical Care, 2000, pp.6-7).

Reading critically between the lines this development is very much about nursing staffing levels but has implications far beyond this. The then Scottish Executive Health Department’s paper Better Critical Care summarises the (agreed) UK view:

“10.1 Critical care should be classified as having 3 levels, extending from routine monitoring after major surgery (level1), through high dependency care (level 2) to intensive care (level 3). It follows that the spectrum of critical care should be recognised as extending from ill patients in general wards and patients in HDUs to patients in ICUs” (Better Critical Care, 2001, p.31).

Interesting that the initial statement was that the move is to a patient-centred approach whilst this summation talks about *where* the patient is. Of course there is much more to Comprehensive and Better Critical Care than this, including specialist care such as Neurological, Liver, Renal and the like, but this categorisation is sufficient to inform the understanding of what comes later. Part of the effect of the implementation of these policies was to the structure of care, to the enactment of handover and to the development of training and education in critical care nursing and intensive care medicine. However, there is still little formal training in

handover across the specialties and the professions although the syllabus for specialist training in Intensive Care Medicine (Faculty of Intensive Care Medicine, 2011, p.80) includes the following, directly extracted from the document:

“Professional relationships with members of the healthcare team

12.7 Collaborates and consults; promotes team-working

12.8 Ensures continuity of care through effective hand-over of clinical information

12.9 Supports clinical staff outside the ICU to enable the delivery of effective care

12.10 Appropriately supervises, and delegates to others, the delivery of patient care.”

In nurse training on handover in the UK, the SBAR approach, as described by Haig and colleagues (Haig, 2006), has been widely adopted in both undergraduate and postgraduate training and practice. This involves a structured linear, normative approach to handover of Situation, Background, Assessment and Recommendation.

Structure of thesis

Handover is highly relevant in all clinical contexts. However the effectiveness and practice of handover has particular importance in intensive care where accuracy and attention to detail can literally bridge the chasm between life and death. The enaction of the handover through its relational network and assemblages and through the 'forms of presence performed with different material's as foregrounded by Sorensen (2009, p.11) is explored in this work.

This thesis is structured into six chapters. Following the introduction, in Chapter two, the appropriate, existing literature concerned with handover is analysed. It takes account of the interested nature of documents of policy, practice and power in creating the structure of handover in intensive care, and explores policy and professional changes in and around Modernising Medical Careers (MMC, 2005) and Modernising Nursing Careers (MNC, 2006) and Project 2000 (Project 2000, 1986). The resultant changes in nursing and medical education and training are evidenced, with the attendant effects on clinical safety, processes and procedures described. The literature on handover is explored through both official (government) and individual professional publications. The research literature concerning clinical handover in nursing and medicine is surveyed. The parallels with handover in industry are considered. The literature on the practices of handover in intensive care is then explored looking at materials and artefacts, geography and how the people in handover, patients, relatives and clinicians are enacted. Inter-professional issues are raised.

Chapter three considers the methodology and the theoretical and scholarly traditions underpinning it. The mixed methods of data collection and analysis

are delineated. The choice of subject and place, the case, is explicated and the ethical and contextual tensions of researching in one's own professional domain, with colleagues as research participants, are explored. To study handover I have done fieldwork in the ethnographic mode. Thus I have audio recorded and transcribed and listened to handovers of doctors and nurses in the intensive care unit of a large Scottish university hospital. I have collected and analysed texts from the intensive care based electronic patient record, from the whiteboards around the unit, and have created images of the plan of ICU and the physical spaces themselves. Artefacts of handover, material objects and others, have been identified and the "different forms of presence" of these is explored (Sorensen 2009, p.11). These have been analysed in relation to the practices and narrative of the handovers. I have interfered with all of these using my field notes of ethnographic observations to cut across and into the data. These notes also inform my reflection on subjectivity, on my assumptions and about my experiences as a researcher *doing the EdD*.

Mol has said, when writing of her own material generated from an ethnographic approach, that "an anthropologist or sociologist might have used that material to present reality (or a part of it) as accurately or grippingly as possible" (Mol, 2008, p.11). My aim, like Mol, is not to create a "faithful image of events" or to make meaning of events "for those involved in them" (Mol, 2002, p.12). Rather it is to create new perspective(s), on handover, on its multiplicities in intensive care through immersion in, and focus on, ontology in practice.

In chapter four, I offer findings regarding the relationships of the different physical spaces where handover occurs, and the differences in the practices

and enactment of handover within, and between, professions. How death enters handover is unearthed. An argument is made that despite the core material of handover being common to all staff groups (that is the patients), multiple ontologies exist which create implications for clinical practice, patient safety and both nursing and medical education.

What the data says on the following key themes is explored.

1. How is handover enacted?
2. Where are the material and social forces in handover?
3. What are the clinical, professional and educational implications?

The data suggest that multiple worlds of practice exist in handover, and from the analysis of the data handover can also be framed as an intra-professional practice. This work proposes that there exist multiple ontologies, at multiple levels, in handover in intensive care. The important implications for professional practice, clinical education and for future research have been laid out.

I will argue for a more open and integrated approach to the practice of handover suggesting that the indeterminacy of clinical situations and participants' multiple selves invoke the necessity for a novel approach to handover. The background to the focus of study is considered in detail.

In chapter five, the practice of handover within and between professional groups is further explored. How this is enacted through the materialities of practices is made explicit. The differences and similarities of this praxis between professions, and between novices and the experienced, are identified. The enactment of patients through grading systems, numbers and hierarchies

is explicated. The active contribution of the artefacts to the relations of handover practices is posited. The place of handover in enacting care amongst staff is identified.

In the final chapter conclusions are reached and recommendations are made.

Chapter 2 The Literature Review

The expectations I expected

were not the expectations

I expected them to be.

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Introduction to the literature on handover

Clinical handover is a fundamental activity which is ubiquitous across healthcare. The UK National Patient Safety Agency (NPSA) proposed the following definition: “The transfer of professional responsibility and accountability for some or all aspects of care for a patient, or group of patients, to another person or professional group on a temporary or permanent basis” (NPSA, 2005). It is enacted in every clinical context multiple times every day. The dominant literature of handover resides in the domains of nursing, medicine and high reliability industry. Much of this involves policy, safety, processes and procedures. In this chapter that literature directly related to clinical handovers is foregrounded and explicated using a novel approach using the following themes: social, material, geographical and the person. Once you have read it you can decide what, if anything, is added by this approach. I have identified the themes from a combination of direct ethnographic observation and from analysing the literature. The different themes are not necessarily mutually exclusive but they form convenient, useful, practical

divisions for the work of the review although their creation may allow us both to identify places of tension, as Mol proposes “A place (*places?*) where clashes may occur-or different ways of working may get spread out over different sites and situations, different buildings, rooms, times, people, questions” (Mol, 2002, p.113) and to make visible fragments, intermingling across my artificially created boundaries. I will present the literature on clinical handover in nursing and medicine beside each other, although that is not how it deals with itself, as it is usually separately located in a nursing publication or a medical publication. There are few comments on nursing in literature written by medical researchers yet there are interesting comments and inferences from a nursing perspective on medical practice and behaviours in the nursing literature. Strange has observed that “During this period (*nursing handover*) it is unusual for anyone to interrupt. Doctors and other professionals are usually excluded from this activity and I have heard doctors refer to the handover by saying that the nurses are at *prayers*” (Strange, 1996, p.109). Traditionally in many UK academic medical units an educational meeting, *morning prayers*, was part of the daily handover. In a paper on the use in handover of wall mounted status boards, defined as *user-evolved artefacts*, Wears describes handovers as “limited team events, in that all members of a *work group* participated, but participation was limited by profession” e.g. all physicians took part, but no nurses, and vice versa (Wears, 2007, p.166). It is of interest to investigate how these inter-professional practices, including the assemblage of artefacts of handover, have come into being, and do handover.

Handover: multiplying the disconnections

With the explicit understanding that this chapter is not a work of policy I will briefly signpost the key writings around the political and professional with a view to allowing you to begin to appreciate why, and how, handover has arrived where, when and how it is. The Medical and Nursing literature is considered alongside each other just as the clinical processes involved run parallel to each other, yet separately. This mirrors many of the ways the professions interact clinically and professionally. So before addressing handover in clinical practice this chapter provides a review of the politically driven professional and educational changes which have resulted in the increasing importance of handover. The relevant literature is critically analysed, both in terms of content and character, partly through an exploration of historical connectivity. Although Foucault might suggest that this is “to group a succession of dispersed events, to link them to one and the same guiding principle” this work is *not* a practice of archaeology (Foucault, 2002, p.24). Many of the documents under scrutiny have been created and have gone live during my career. I am looking at them from the stance of one who has been enacted by them, in real time, in professional practice, “inside that dubious unity, medicine” as Foucault has it (Foucault, 2002, p.29). The creation of this praxis, including constraints and expectations and experiences, is made visible.

Literature Review

When considering the major upheaval to clinical working patterns in the UK over the last twenty years, and the seismic changes in training and education in both medicine and nursing, the direct effects on the practitioners and practice of

handover may appear self-evident to some. Handover has been reframed and newly situated through a professionally driven process of institutionalisation.

The upheavals to Medical training are clearly described in the UK Government Select Committee on Health third report (Modernising Medical Careers, House of Commons Health Committee, Chapter 2, The gathering storm 2003-2007). In view of the major implications for handover of these changes in Medical training, and the changes in Nursing training happening in parallel, a succinct analysis of the political initiatives and the educational developments is included here.

Medical training and education

In 1993, in response to a perceived need to improve training for hospital and general practice based registrars, Calman recommended changes to their postgraduate medical education across the United Kingdom (Calman, DoH 1993). Simultaneously the General Medical Council (GMC) scrutinised the undergraduate curricula in all UK Medical schools producing a template to inform pre-registration medical curricula. In response to the European Working Time Regulations, in a drive to reduce junior doctors hours of work, the Chief Medical Officer for England was commissioned to propose a number of changes which are published in “Unfinished Business: proposals for reform of the Senior House Officer grade” (Donaldson, 2002). A key recommendation from this document is the change to training structures which links the two years immediately post-graduation into an integrated Foundation Programme. These changes have had direct impact on handover by increasing its frequency and, in many cases, the number of patients involved. Modernising Medical

Careers (MMC, 2003) is the response of the four UK Health Ministers to the consultation on Unfinished Business and, basically, reiterated its key points. In “Modernising Medical Careers: The next steps” the structure of the new Foundation and Specialist training programmes are set out and highlight a move to a competency based training system, and away from an experiential and apprenticeship based training, with the creation of the curriculum for the Foundation Years (NHS UK, 2005) which was subsequently revised (Foundation Programme, 2012). The adoption of this system has resulted in the phasing out of traditional on call rotas, which provided significant personal continuity of patient care, with a move to full shift working patterns. This has increased the number of handovers and changed how they are conducted. This has happened in intensive care.

In introducing Modernising Medical Careers: the Foundation Programme the statement is made that:

“Above all the driver for change was the need for better care systems for patients. The apprenticeship model, long the bedrock of our training in the past remains important but now needs to be set within efficiently managed, quality assured training Programmes compatible with the Working Time Directive”.

Modernising Medical Careers (MMC, 2004, p.1)

The apprenticeship model, with cohesive teams working together repeatedly and enabling continuity, has been lost by adherence to EWTD. Medical staff have reduced experience, fragmented training opportunities and disruptions of day to day clinical care directly as a result of shift working. As weekly working hours are reduced, and overall years of training are shortened, other individuals

are gaining the experience which these doctors would have previously accrued. This has resulted in less experienced senior clinicians who are less well equipped to deal with the complexities of some patients' conditions, and who are less well rehearsed in dealing with the uncertainties which are part of daily clinical practice. Add to this the interruptions to continuity of patient care set in place by the adoption of full shift working and it can be seen that handover is exigent, however quotidian it appears.

Nursing training and education

In a separate development, and following on from the review of the future nursing manpower needs of the NHS (UKCC 1986), during the 1990s nursing training in the UK was changed radically. Project 2000 was an initiative which deliberately moved nursing training from its long established practical and experiential learning based in the wards to a university based academic programme with forays into clinical practice on placements. In Project 2000 the syllabus was rendered more scientific with an increased emphasis on basic sciences and technical aspects of care, the acquisition of diplomate status and a deliberate disengagement of nurses from much of their traditional role. These changes were emphasised by the abolition of the Enrolled Nurse grade and the creation of a new group, Health Care Assistant as detailed by Francis (Francis, 1999). Ford and Walsh conclude that the move to graduate based nursing will enhance the criticality of nurses (Ford and Walsh, 1994). It could also be regarded as a process of distancing nursing from a perceived ritualistic approach, by moving to a more evidence based training, as ritual in nursing has been described in negative terms Walsh (Walsh, 1989). But are there also elements of inter-professional rivalry here with nursing being pushed in a

scientific direction as Francis and Humphreys argue for enhancement of nursing status with a move towards more autonomy and regulatory control? (Francis and Humphreys, 2000) Macleod Clark summarises the findings of a large scale study “Project 2000: Perceptions of the Philosophy and Practice of Nursing” in *research highlights from the British National Board for Nursing, Midwifery and Health Visiting* (Macleod Clark, 1996). It is telling that doctors are mentioned only once and in the summary. This is in the final paragraph under the heading “The qualified Project 2000 Diplomat-Socialisation into the role” and reads: “Doctors were no longer perceived as *gods* descending upon the wards”. My emphasis. The paper Modernising Nursing Careers sets forth to further strengthen the barriers between the professions, Modernising Nursing Careers (2006). Nurses have transferred traditional caring activities to others and at the same time nurses have accepted and integrated aspects of the medical *curing* model into their professional remit. The continuum is promoted as ranging from caring to curing but does it depend on how acute and severe your illness is? Mol encourages us to accept that cure and care merge: “In practice, after all, the activities categorised as *care* and *cure* overlap” (Mol, 2008, p.1-2). How this is happening in intensive care handover will be explored in this work.

Clinical handover

Much of the extant clinical literature on handover falls into three distinct categories. The first of these is official, top down, government generated material an example of which is the “LITERATURE REVIEW REPORT: CLINICAL HANDOVER AND PATIENT SAFETY” (original emphasis) from the

Australian Council for Safety and Quality in Healthcare (2005, p.ii). The authors have clearly invested a huge amount of work in this although they are anonymous to the reader. Their use of *report* after literature review aligns itself with the “aim of the literature review to gain a comprehensive understanding of the evidence and work to date in respect ofclinical handover in the *health industry*” (my italics as health is not *generally* conceived of as an industry in the UK NHS). Along with many others the authors identify a gap in research around handover, a need for it to be taught and performed better, and that protocols and guidelines should be put in place. The second kind of literature available is that from professional organisations and it has similar messages to the first, for example in “Safe Handover, Safe Patients. Guidance on clinical handovers for clinicians and managers” (2004). This report was catalysed by the work of the Junior Doctors Committee of the British Medical Association (BMA) but interestingly contains letters to (“A message to...”) not only medical trainees but also to senior medical staff, medical managers, postgraduate deans and clinical tutors and to medical students and medical schools. Similar guidance can be located across the medical specialities in the UK and in North America. The third category of relevant literature on handover with which I propose to substantially engage involves clinical handover itself. Throughout all of this literature patients, relatives, certain staff groups and others are largely missing.

Handover and the social

Handover occurs on a number of levels from the mundane to the professional. By this what I mean is that at one end of the continuum simple facts may be passed on whilst at the other end what is handed on (and hopefully received

and accepted) is professional responsibility for a patient or even a ward or a hospital full of patients. There are overlapping clinical, professional and organisational elements involved the inter-penetration of which will be developed later. Whilst handover should be a fundamental part of *collaborative* clinical practice most of the research literature is siloed and intra-professional. Mukherjee, a physician, has described handover as that: “brittle moment of transitionin the confusing interstitial space between individual and collective responsibility” (Mukherjee, 2004, p.1824) and Strange, a nurse, identifies other elements involved describing it as “the time when power, control and responsibility for the care of patients is transferred from one shift to another” (Strange, 1996, p.106).

A comprehensive literature search reviewing handover (handoff in their US terminology, end of shift report, sign out, nursing handover for others) in the clinical research literature entitled “The published literature on handoffs in hospitals: deficiencies identified in an extensive review” has been performed (Cohen and Hilligoss, 2010). Interestingly in a previous version of this paper (available on line from the deep blue library Ann Arbor Michigan). the title is “Handoffs in Hospitals: A review of the literature on information exchange while transferring patient responsibility or *control*” (my italics). They posit handover as an “intrinsically social interaction”. Much of their writing and deliberation is a competent summary of the work done by other authors which is concentrated on the technical aspects of handover, teaching and learning handover, how to do it *properly*, and on checklists and methods to achieve this. The authors organise the literature into six themes: the definition; the functions; the challenges and difficulties; the costs and benefits of standardization; possible

protocols for standardization; and questions needing answered. There is a concentration on physician handover although they mention nurse and technician handover and cite some of that literature. There is no questioning of the development of practices of handover in separated professional groups. But I do not want to be argumentative or dismissive, and at the same time I do not want to do a review of a review. I do want to cast doubt on it though. In order to do this I will start with the conclusions. “The literature reveals that handing off is a process that could be quite significant for patient safety, and therefore one meriting substantial investment to understand and improve it” and “...these factors make the determination of the best handoff procedures a contextual-and likely effortful-process of inquiry, design and implementation” (Cohen and Hilligoss 2010, p.2-3). This review would be regarded as an exemplar by clinical practitioners and many academics in medicine. It is the kind I, myself, have written in the past (Nimmo, 1996, 2007, 2008, 2014) and (Strachan 2003), a descriptive catalogue of the literature but with no attempt to, as Mol puts it, “situate the argument in the scholarly tradition that made it possible” (Mol, 2008, p.11). The papers and other publications are accepted at face value with no reflexivity on the part of the reviewers. There are two hundred and ninety five references listed in an attempt to be inclusive (with a *complete* list of 460 plus articles available on line). I have sifted through these and have found many which were already identified by my own literature search. I have also found a few which help bring my review up to date, but I have approached this selectively. Mol, whilst setting out the ground rules for her book, (Mol, 2002, p.30) admits that she “would prefer to not include any references at all” at the risk of crudity although she acquiesces to the wisdom of Latour quoting him as

saying “A paper that does not have references is like a child without an escort walking in the night in a big city it doesn’t know” (Latour, 1987). I think that the question “what do these cited papers do?” should be asked. As others around the world have done, do they look at safety, at effectiveness, at improving, at standardisation, at error, at handover methods, at rituals, how to handover, experiences, handover tools? Indeed they describe all of these. But they only take things so far.

The majority of the publications on handover are review articles and literature reviews. Like many others Scovell in writing for nurses in general on face to face handover highlights the social aspects of the event (Scovell, 2010, p.38). “There is a settling in time, a preamble in which the nurses talk about their private lives”. Singer writing for Emergency Physicians (a group who have particularly highlighted handover as an issue) reviewed the role, mode/format, location, structure, limitations and inadequacies of handover (Singer, 2006, pp.751-752). The latter do not reify the rituals of handover, but describe the process as being “unstructured and error prone” with “poor socialization” in a different context, that of a US Emergency Department (Singer, 2006, p.754). They then somewhat contradict themselves by highlighting the exemplar of clinicians introducing themselves to patients as “a meaningful symbolic ritual”. On a single page they denigrate and then praise ritual. This could reflect the different meanings which can be ascribed to the term. Their review is a call to emergency physicians to standardise what they term “the global exchange” of handover. They are talking about the handover of a group of patients not one individual and they exhibit a distinctly positivistic *we can fix it* attitude. Although a critical component of handover of the intensive care unit and its patients

involves a similar group handover there is nothing in the literature regarding this. The way in which critical care has evolved leaves us in separate rooms not knowing what each group is saying/doing/enacting. I am unclear why this is when handover is such a pivotal part of clinical intensive care. Perhaps the clinicians think that it is working well so it does not need to be researched? As in many other publications from clinicians, professional bodies and in policy documents, as described earlier, they conclude with recommendations on “improving handover” which include educational initiatives and what they describe as “STRATEGIES FOR IMPROVEMENT” (original capitals) including consensus, routine, safety, standardised content and confidentiality (Singer, 2006, p.752). These themes appear repeatedly in these texts. The same things keep being said, not because the issues are insurmountable, but because the authors all believe that these are the crucial points which need to be fixed. I foreground this literature in order to move over and on from it. How can I justify this? Many of these publications, particularly those of policy, are no doubt important having driven the developments which have shaped the current situations and practices of clinical handover. But I am concerned about their linearity and normativity, of their reliance on assumptions. It may be no coincidence that the format of these publications closely resembles that internationally applied *solution* to handover known as SBAR meaning Situation, Background, Assessment and Recommendation. When taken and applied specifically to the outputs of this literature it looks like this:

Situation: mode/location/format.

Background: role and structure.

Assessment: limitations, inadequacies safety issues.

Recommendations: for improvement and enhanced safety.

Haig describes SBAR as a “A shared mental model for improving communication between clinicians” and “a mechanism to support open, honest communication” (Haig, 2006, p.167). In that paper Haig describes the implementation of the SBAR system in a US hospital and how “it improves information transfer during handover” and “it promotes the six aims of the Institute of Medicine in providing safe, efficient, effective, equitable, timely and patient-centred lines of communication” (Haig, 2006, p.167). What it really describes is the implementation of a system, a tool, a process which *might* help in the sharing of mental models and the achievement of the IOM six aims but there is no evidence presented for either of these having been achieved or for an improvement in patient care or outcomes. But I do not want to get into an argument about this *modus operandus*. Indeed, I have already confessed that I have used it myself in previous writings. My point is that clinicians see a problem, look at the information available and, because they are *doers*, look for a solution. In clinical practice this is particularly the case in intensive care, emergency medicine and anaesthesia due to the amount of time-pressured, acute hands on care and the need to problem solve and sort out *the* issues rapidly. Solutions are created which might be deemed *strategies for improvement*. At this juncture I have aligned myself with them, the writers of this body of work. My dual persons of clinician and researcher emerge as I engage the literature to make what is so familiar and normal to me unusual and strange, as if I am seeing intensive care for the first time. And this brings me to that

which is called *embedded knowledge*. In considering this Mol writes “Doctors do not take the time and effort to make things explicit. Rather they spend their time working along” (Mol, 2002, p.15). This fits very well with the medical model of literature reviewing described before. Yet I am reflecting on it from the perspective of the researcher rather than that of the clinician. My move to us from them, othering, is in its own right interesting.

Returning to handover itself, perhaps questions about how it is done socially and what happens to its participants: nurses, doctors, patients and others might be a way of relating to, possibly linking with, the literature? Most of the research literature about clinical handover is based within one staff group with handover occurring between professionally aligned clinicians eg anaesthetist to anaesthetist, nurse to nurse as with McFetridge’s work describing handover between emergency room and intensive care nurses (McFetridge, 2007). The majority of studies involve individual to individual handover of single patients although there is some work around team handover and on handover of multiple patients. There is, again, an understandable emphasis on facts and accuracy (Singer, 2006), in reducing risk and error but I am not going to explore that region of the literature further here. I will however relate to one project from the general nursing literature which is of relevance as the method is similar to mine but the methodology is different, and the conclusions are difficult to interpret. This is opened up to help frame the alterity of my work. This involves an observational, ethnographic study of nurse handovers in a metropolitan medical unit in Sydney, Australia: “Nursing handovers do we *really** need them?” (Sexton, 2004). Twenty eight nursing handovers were audio-recorded

* original italics

and the recordings transcribed verbatim. The transcriptions were analysed using a commercially available programme, QSR NuDist Vivo, coded and then a variety of conclusions drawn. The group describe their use of content analysis where “each coded passage conveyed one thought, idea or topic for discussion” (Sexton, 2004, p.40). Their main motivation seems to be to reduce time spent on nursing handover with a view to making the process more efficient, “streamlining” in their words, and it is pertinent that in their discussion they cite nursing staffing shortages as an issue. Having said this concludes that “the content of shift handovers is irrelevant to patient care” arguing that their findings achieved by a process of systematic content analysis “provide strong evidence for reappraisal of the continuing role of handover” (Sexton, 2004, p.42). This is despite their having recognised that “handover is a complex phenomena involving elements of transfer of clinical information, socialization, debriefing, containment of anxiety and ritual” (Sexton, 2004, p.41) and not only a mode of information transfer. The conclusions of these authors in collapsing the importance of handover are at variance with most of the other work published on handover. The academic literature supports the widely held empirical clinical view of the pivotal place of handover in practice. Indeed, in another ethnographic study Wolf, having identified both sacred and profane aspects of a nurse’s daily work in an acute care hospital setting, identified another aspect of handover (in this context called “change of shift report”) which was viewed as “the means whereby nurses learn to understand the actual meaning of what it is to become a nurse” (Wolf, 1988, p.66) and as “a major forum for accountability and responsibility for patient care” (Wolf, 1988, p.66). In studying ritual in nursing practice Holland observed handover as an integral

part of communication on the ward and went on to introduce the concept that “discussion of a more personal nature regarding patients, not using *nursing terminology*, social talk could take place” during coffee time away from the patients (Holland, 1993, p.1466). This may have importance in the analysis of transcriptions of nurse to nurse and doctor to doctor handover in the current study.

Handover: sacred and profane

Analysis of the literature of clinical handover reveals a number of themes. There is major emphasis on the handover process being dangerous with patient safety, error and litigation featuring in many publications. The fragmentation of continuity of patient care through shift working is also surfaced as a major issue. In describing handover as the “precarious exchange, this rickety old liturgy” Mukherjee suggests of the reduction of junior doctors hours in the US that “The real challenge of the 80-hour workweek is that...it contorts the idea of residency itself” (Mukherjee, 2004, p.1824). This is an area worthy of further attention in itself but not here. I merely include it to highlight the implications of the reality that junior doctors in the UK have reduced their working week to 40 hours with the even greater incumbent burden of handovers than their colleagues in the US. Most of the papers and articles on handover which are accessible describe the transfer of *patient information* or *patient data*. In a postal questionnaire survey of handovers in obstetric anaesthesia in the UK Sabir concluded that although handover times are usually allocated the participants in handover varied and were seldom multi-disciplinary (Sabir, 2006).

Pothier and colleagues have studied nursing handover using simulated “fictional” patients and five volunteer nurses in an Ear, Nose and Throat ward (Pothier, 2005). They recorded the retention of *data* about the patients as being dependent on which of three styles of handover was utilised: verbal; a note taking written style; or a verbal handover with a pre-prepared printed sheet. The latter was found to be most reliable and happens to be the method used in the intensive care unit under study here. Although the reliability of handing on information was examined, and it was noted that incorrect data was passed on in the verbal handover, they did not question the accuracy of the printed data passed on. Repeated, empirical, observations of the use of handover sheets in clinical intensive care practice supports the existence of inaccuracies, and even mythologies, which are handed over and accepted as truth since they are on the computer and then printed out in black and white. These floating, circulating texts, materials if you like, are considered in more detail later in this chapter. Returning to Pothier’s study, it is of nursing handover yet the researchers are three doctors and a healthcare assistant with no nurses involved in the design, performance, analysis or writing up of the work. There are implications for inter-professional working raised by this. The research is focussed on a particular professional group but neither their perspective nor their professional experience are utilised. A distribution of the professions into separated silos is suggested.

Handover in industry

The healthcare community, particularly managers and politicians, have imported information on handover from studies in high reliability *industries* to

provide guidance on *clinical* handover. Clinical researchers have also engaged the literature based on industrial disasters, e.g. the Piper Alpha oil platform fire, (Lardner, 1996). The generalisability of this output, particularly taken out of context, is debatable but I include it here because the comparisons are made daily and promulgated by publications such as “Why hospitals should fly” (Nance, 2008). Others have amalgamated the practices of handover in Formula One pit stops with practices from aviation in proposing a method for handing over patients being transferred from the operating theatre to intensive care (Catchpole, 2007). I include these publications from high reliability industry here, perhaps to try to persuade you that there are different ontologies between these domains and that *description* followed by *recommendations* may not be the only approach.

A commercial company *infotechnics* has produced opralog™

This is a data management system with “complete flexibility” in helping “to support shift handover”. The promotional pamphlet about it includes several sections and the Opralog Philosophy is detailed as:

“Logging information must be simple”: what about accuracy and utility and accountability?

“One version of the truth: single entry of information ensures efficient, accurate recording of events.” A bit of an assumption here when human beings are involved.

“The what and the why.”

“Information is highly visible.”

“Learn from past experiences: through fast, easy access to historic information.” But this can only happen if the information is accurate, an intelligent analysis of the data is conducted and the conclusions are disseminated. And what is the accuracy based upon?

“The irruption of a real event...or occultation, this and that” (Foucault, 2002, p.27). What is written and what is left out? How is the writer influenced in knowing that it will be looked at by seniors and management, a paradox created by observers as described below?

The publication details process after process with little underpinning philosophy or background. There are no references. Then the control aspect appears.

“Comprehensive audit trail records every action and change carried out on each log entry; audit trail of all changes to user privileges and access”. Is this the panopticon in electronic format? So it can record the identity of individuals who produce negative outcomes whether financial or safety related. It is also of interest that the identities of the authors is not visible. This is basically a version of the SBAR approach similar to that described earlier.

In contrast to this Parke and Mishkin have written a well referenced paper supported by real life experience with handover of shifts 24/7 during NASA’s Mars Exploration Rover (MER) surface operations (Parke and Mishkin, 2005). It includes a thorough review of the handover safety literature enabling the authors to convince the reader in a couple of paragraphs that this is an area of importance (Parke and Mishkin, 2005). They then set out their “Best practices in shift handover” starting the section “The Europeans have long been working in this field” (Parke and Mishkin 2005, p.1). The paper was initially presented in

Nice, France and one wonders whether this is a specific political ploy both to acknowledge the European contribution but also to point out to those back in the United States that they are lagging behind? The authors engage with the human factors and cognitive literature and enunciate the concept of shared mental models of the incoming and outgoing workers. They recommend two way face to face handover with written materials and encourage that the “content of handover captures intent”: where are we? where have we been? where are we going? This is situation awareness. They also realise the potential benefit of handover in having a second opinion available to help with decision making, problem solving, prioritisation. Of course this could also potentially result in conflict. The latter portion of the paper details the interactive handovers in a series of three charts showing the temporal and spatial relationships of the individuals involved. In the current study twenty four hour patient observation charts will be presented in the handover data. One factor which they emphasise is allowing time for adequate overlap between shifts (at all grades of staff). They also highlight the need for repetition and for a large proportion of MER staff to witness discussions of intent regarding each sol’s (day’s) activities. They are all in the same room together. The language is clear, the evidence which they present from experiential learning is highly plausible, but I just have this nagging worry about the application of the underpinning literature on the basis that they have accepted it utterly without any explicit critical reflection. Having said this, the handover model which they have used and studied is so different from the model which is presented in my study that their relationship bears comparison and unravelling, although some of the artefacts enacting both are similar.

Handover in Intensive Care

A limited number of studies of handover have been carried out in intensive care. These were mostly performed by nurses, involve nurses and are ethnographic in nature. Manias for one adopts a critical ethnographic approach (Manias, 2000). As I have done earlier she identifies that previous “accounts of handover as a process of communication tend to be of a descriptive nature, which lack critical depth” (Manias, 2000, p.374). Her research methods were mixed involving participant observation of nurses in a sixteen bedded intensive care unit in Melbourne, professional journaling and focus groups. Whole unit handover was studied involving nurse coordinators (the equivalent to charge nurses) together with the staff nurses coming on duty, and then these nurses being handed over individually one to one at the bedside of their individual patients. The step on from the previous work they call *descriptive* emerges:

“critical ethnographers are not only interested in interpreting situations and experiences, but also in collaboratively examining the power relations at work in social relationships. This form of scrutiny aimed to uncover the contradictions, habitual activities and complexities underlying nursing interactions during handover” (Manias, 2000, p.374).

There are two comments which I would make about inter professional power, and also the reading of practice, which the authors exhibit. Firstly they talk about nursing oral handover as being “in stark contrast with the medical profession, which values written documentation of specific facts” (Manias, 2000, p.373). This is an unsupported and unreferenced opinion and it could be argued that it is inaccurate. Oral handover is the norm in hospitals in Scotland and is

standard in the context of intensive care. Secondly they “identified handover as a dynamic, expressive space used exclusively by nurses for communicating orally about their patients” (Manias, 2000, p.374). In the light of oral handover being ubiquitous in clinical practice in Scotland it is of interest to know where these statements originate from. Is this an Australian phenomenon? As a reader of their work I am in a privileged position. I can run through the text and dissect out words which might help to construct (or fabricate?) an answer to my questionings. So here are the words I have extracted: “social and historical contexts; complex power relations; exercise power; who is under examination during handover?; tyranny; handover acted as a form of surveillance; reaffirm their control and status; objectified and scrutinised; normalize activities” (Manias, 2000, pp.373-382). I turned to the references in the paper looking for the name Foucault. But he was absent in body, although his presence is palpable, whilst invisible, throughout the text. Referring back to the two extracts contrasting nursing and medical approaches the power balance might be of interest to examine. The study was conducted in different spaces within the intensive care unit as was this current study. It posits the bedside handover as “an examination: scrutinizing nurses and their care”. The other themes “the tyranny of tidiness” and “the tyranny of busyness” were identified as keeping nurses isolated from each other and preventing them from showing their feelings in an attempt to “fit into the expected norm of a busy and efficient nurse” (Manias, 2000, pp.376-377).

In attempting to address the power issues it has been difficult to, as Fenwick puts it, “approach(es) power relations by questioning the very connections that build and hold together those black-boxed, taken-for-granted networks that

entrench oppressive or just plain unproductive practices” as they are opaque (Fenwick, 2011, p.174). The literature also contains other indications of power struggles. An excerpt from an article on Professional Misconduct in the British Journal of Nursing reads that the lack of written information at handover “exacerbated the tension” between medical and nursing staff suggesting, or assuming, that there was a pre-existing natural tension (Castledine, 2006, p.524). Fenton describes the use of a corporate benchmark “Essence of care: privacy and dignity” to inform training in a novel handover technique in a ward setting (Fenton, 2006, p.33). There are elements of hierarchical power raised: “a member of staff *presided* over the handover” and of inter-professional power as the audit after the changes showed that nurses shifted markedly from imparting “medical information” to relating “nursing information” (Fenton, 2006, p.33).

In another detailed study Philpin has employed an ethnographic research approach to the bedside nursing handover in intensive care (Philpin, 2006). This work is put forward as “from a larger study” but there is no reference to that work included. The title of the paper implies that it is about “transmission of information”. The methods included direct observation of bedside nurses, the researcher taking field notes in real time, and the use of subsequent ethnographic interviews (some with previously shadowed staff). They cite Hammersley and Atkinson (1995) as their source for their methods but James P. Spradley’s book called “The Ethnographic Interview” published in 1979 clearly predates this.

In addition to these data key *artefacts* used in the handover such as charts and notes, were examined. The researchers’ main conclusions are that the

symbolism involved in the ritual of patient handover is not just used to pass on clinical information but also responsibility for the patient and the family. The handover was also identified as an opportunity for peer support from the incoming nurse regarding the emotional, physical and technical challenges and around events for the outgoing nurse from the preceding shift. She also suggests that the nursing ritual articulates the values of “the group” (nurses). In several exchanges she, and her research subjects, use the term “the doctors”. These are depicted as nameless, faceless individuals and in most of her reported instances they are seen to be exerting power over others. Although the author makes a statement about her reflexivity, and the recognition of her own assumptions, this does not come through in the text or in the excerpts from the field notes.

“I was struck by both the meticulousness of the nurse giving the report...and the attentiveness of the nurse listening” (Philpin, 2006, p.88) and she makes the assumption that “attentiveness symbolises a commitment to this patient’s care” (Philpin, 2006, p.88). They were being observed, and knew it, so this might have affected their behaviours. She also discusses the inclusion, or more often non-inclusion, of the patient in the handover and like many of the other publications on handover there is no suggestion of including the relatives during the process. In the literature with which we have engaged so far the patient has been backgrounded or is even absent. Philpin observed that “the nurses that I shadowed were necessarily working with a number of other occupational groups, and also patients, although both of these groups were on the *peripheries* of the study” (Philpin, 2006, p.88). By this marginalisation the researcher demotes the relationships and interactions of these groups in the

enactment of handover. “It’s (*handover*) done at the bedside and whoever was on the previous shift hands over the past medical history, the current history and what’s been going on since admission really. And what they’ve done for that shift as well and the changes during that shift, recent changes, ventilation, cardio-vascular status, what’s on their chest, what their oxygenation’s been like, blood gas results, urine output, fluid balance, feeding regime, skin-what that’s like, and the family *as well*.” (my italics) From Junior nurse field interview (Philpin, 2006, p.88).

Handover and the material

According to the literature on the process of handover in intensive care a number of *things* are used. Philpin in the study of bedside nurse handover in a UK intensive care unit identified these as “observation charts, paper towels and nursing notes” which she described as “rich in symbolism” (Philpin, 2006, p.90). She proposes that the chart helps “the reporting nurse to frame her/his account of the shift’s events” as well as “confirming the nurse’s work: that is the chart also has a surveillance element” (Philpin, 2006, pp.89-90). During bedside observation she noted that some nurses used red pen for some particular observations and when treatment was altered. When asked “why?” one nurse replied “if a doctor comes along and says ‘he wasn’t on 40% oxygen at 4 o’clock’ you can say ‘Oh yes he was, it was changed at 12’-you can see it instantly” (Philpin, 2006, p.89). Philpin suggests “It also implies that nurses need to use highly visible red pens to protect themselves from *the vagaries of doctors*” (Philpin, 2006, p.89). She goes on to discuss who the chart belongs to with a senior nurse who explains “it’s as much *their* chart as it is ours” meaning

the doctors (Philpin, 2006, p.90). Then we move on to *paper towels*. Philpin observed the incoming nurse making notes on a paper towel during the handover (Philpin, 2006, p.90). These were distinguished from the official “important and permanent written information in the charts” (Philpin, 2006, p.90) and the nursing notes as personal, private and transient (being thrown away at the end of the shift). The bedside nurses in the current study also use paper towels in this way, but also to create a shopping list of questions for the ward round, jobs to do and requirements for their patient eg drugs, nutrition, communication with family. Both the charts and the paper towels are directly relevant to this research. Philpin, like many others (Philpin, 2006), looks at the utility of the objects, but does not explore how handover is enacted through the intra-actions of the cultural, symbolic and material assemblage which includes these floating texts. In another ethnographic study of nursing shift handover, in an acute elderly care unit in a district general hospital in the south of England, the focus is on *scraps*, the term that nurses understand as “the personal recordings of information that is routinely made on any available piece of paper” (Hardey, 2000, p.208). The use of the term “routinely” suggests a normative process. The data collection was by “non-participant observation, the tape recording of handovers, the examination of various formal and informal documents and interviews” (Hardey, 2000, p.210). I include this information to create a contrast with my own methods. Using grounded theory they identified three main themes: construction and content of scraps; the role and use of scraps; confidentiality and disposal. Scraps were labelled as “transitory bits of paper” (Hardey, 2000, p.210) and located as a place where the nurses document things they do not want to put in the Kardex (official nursing notes)

such as “sometimes I’ll put next to peoples names “*pain in the ass*” to remind myself that I’m not gonna do a lot for that patient because she annoys me” (Hardey, 2000, p.211). Scraps are therefore personal and Hardey reports that “nurses were aware of the potentially contentious nature of their scraps and some had developed complex codes or shorthand that made it impossible for others to read their notes” (Hardey, 2000, p.213). In the five wards where this study is situated the nurses used their scraps as the main information source about the patients in their ward whilst the Kardex was relegated to, at best, a secondary role. For two nurses looking after twenty four patients this might be understandable whereas in UK intensive care the maximum number of nursing notes to be completed by an individual nurse each shift would be two so the nursing notes could be more robust and reliable. They still use paper towels though. Scraps are usually kept in pockets as are the Wardwatcher handover report sheets which are used by the charge nurses, doctors and advanced nurse practitioners in the unit where this study is located. This brings us to the third theme, namely confidentiality and disposal. Some of the participants in Hardey’s study confessed that they kept all of their scraps for years at home “because it might be useful someday”. A personal insurance policy? (Hardey, 2000, p.212). He concludes that “the use of *scraps* in nursing is largely inconspicuous in the literature but common in practice” and goes on to call for “further research to clarify and understand their construction and use” and that “the recognition of *scraps*prompt a discussion about their place in contemporary nursing” (Hardey, 2000, p.213). This fascinating study is now thirteen years old and scraps and scribbles on paper towels are still being used

in the same way. It could be interesting to compare the use and utility of these unofficial scraps with that of the Wardwatcher Handover report sheets.

And it is not only nurses who use these texts. Mukherjee describes the scene at *sign out* (another term for handoff or handover) in Harvard Medical School : “At the end of a frantic afternoon 18 residents are simultaneously handing off patients to one another....huddled around a table, scribbling hieroglyphics on scraps of paper” (Mukherjee, 2004, p.1822).

In the study of nurse handover discussed earlier the authors concluded that utilising printed handover sheets to support a verbal handover is the most reliable way of maintaining the integrity of the clinical information (Pothier, 2005). Yet in this work there is no questioning of, or reflection on, the accuracy or reliability (truth?) of the data. Accuracy is one thing but accurately handing on rubbish is another. To unpack what I mean I will use a clinical example. The admission comments on the Wardwatcher handover sheet for a patient in the ICU said that she had had a “massive upper gastro-intestinal bleed” (vomiting blood) “from oesophageal varices” (varicose veins in the gullet) which had been “treated by banding” (literally ensnaring them in elastic bands). As I listened to the presentation it did not seem to fit together so I sought out and read the operation note from the procedure. There were no oesophageal varices and the bleed was from an ulcer in the duodenum (exit tube from the stomach) which was treated by injections of adrenaline (a vasoconstrictor which closes down the bleeding vessel). No elastic bands were required to staunch the bleeding. This handover sheet was a circulating text which could have created a different reality out of a myth.

In a study of nursing handover the researcher states that “The motivation behind this research is to gain a better understanding of how handovers operate and to examine this nurse to nurse communication”. With this statement Kerr summarises her work as a “qualitative study of shift handover practice and function from a socio-technical perspective” (Kerr, 2002, p.125). There is a review of the literature which starts with the work of Lelean (Lelean, 1973). Many papers cite Lelean as a venerable source of knowledge on handover. The main objective of *her* study was to document the activities of ward sisters as part of a UK wide venture “The study of nursing care project” administered by the Royal College of Nursing and National Council of Nurses of the United Kingdom and financed by the Department of Health and Social Security. Nursing report (handover) features in parts of two pages of the text which is fully 168 pages long. Yet this reified text is constantly referred to as an exemplar regarding clinical handover. I wonder how many researchers have gone back and looked at the source data? Kerr as a psychologist is unlikely to have the subject matter expertise to decode this. The conclusions of her study are that “These evolved systems are based on several socio-technical principles” and that “Handover is robust and can cope with conflicting demands and intrinsic tensions through a flexible specification of function” (Kerr, 2002, p.133). Local users are seen as experts, who can solve problems and make decisions about the design and management of this socio-technical system. There is no evidence presented in her paper which supports this.

Although machines and other things such as vital signs monitors, ventilators, pagers, blood gas analysers, computers, uniforms, furniture, rooms, name badges are all related, in various ways, to handover its literature does not enact

this. However Baier writing as an intensive care patient about her ventilator (the breathing machine keeping her alive) says “That monstrous machine to which I was wired just kept on pumping” (Baier, 1995, p.36) and when sharing her experience of other intensive care devices says “How nice! A tube for everything. I counted them: these two the respirator the Foley catheter, and four sensors that *plugged* me into the nursing station” (Baier, 1995, p.55). In contrast Sandelowski describes the “emergence of the posthuman body as a disembodied informational structure with no clearly defined self, and the disappearance of the humanist body, or the flesh and blood encasing of a unique and stable self” (Sandelowski, 2002, p.60) and goes on, talking about electrocardiography monitoring, one of Baier’s four sensors, “The patient is no longer necessarily the corporeal person in the bed, but rather the hypertexted, hyperreal representation on screen in the form of a rhythm strip; black and white or colorized image” (Sandelowski, 2002, p.66) (Image 2.1).



Image 2.1 The electrical monitoring of heart rhythm

In “Visible Humans, Vanishing Bodies” taking a turn of “postmodern orthodoxy” Sandelowski argues that “The clinician is no longer necessarily the flesh and blood person next to the bed..., but rather a voice on the telephone, an email correspondent, an online presence, or tele-image of a face” (Sandelowski, 2002, p.66). “In the patient undergoing surgery, hidden under the drapes, they are recreated through the monitors and the charts” (Sandelowski, 2002, p.67).

Handover and geography

Where is handover located and is this important? In some of the published studies on handover the place in which it happens is not mentioned. Sexton researches handover of charge nurse to all incoming staff yet the location is

unknown (Sexton, 2004). In contrast Scovell has elevated the location of handover to a full section of the review (Scovell, 2010). The potential for handover to happen in multiple locations is surfaced including, as in this current research, at the bedside or in the office. Manias in discussing bedside handover describes it as “an examination” from the perspective of the nurses involved (Manias, 2000, p.376). Kerr’s study involved handovers at both the nursing station and the bedside (Kerr, 2002). Archer Copp describes the situation of the “telling operation” of handover as “a traditional gathering of nursing staff” in the nurses’ station, conference room, utility room, ward kitchen, empty patient room, sitting room, or even in the corridor (Archer Copp, 1972, p.22). It sounds like geography and availability enact the place of handover. As Mol and Law describe in expanding on fluid spaces “The social inhabits multiple topologies....Sometimes fluid spaces perform sharp boundaries, but sometimes they don’t” (Mol and Law, 1994, p.659). Similarly, in anaesthetic practice, Sabir documented handover in obstetric anaesthesia occurring in a number of settings: outside labour ward (25%); at the labour ward wall board (48%); in the labour ward anaesthetic room (26%); and at the bedside (1%) (Sabir, 2002). Yet in none of these studies is the site of handover worried over, its assemblage queried or questioned, or zoomed in on as a place of intra-action. And there are no studies looking at the handover of the same patients in different locations. So multiple handovers are enacted by multiple folk separated temporally, spatially and professionally. Multiple worlds, multiple ontologies might be enacted in some way. One writer on this Mol reveals disease being done differently by different specialities in their own separated worlds (Mol, 2002, p.39). Taking the day to day activity of dog walking and

relating it to the disease in “doing intermittent claudication through the dog” she proposes that: “the architectural divide is duplicated by a divide between human populations” with “their human populations different, too” (Mol, 2002, p.23). Yet in intensive care these disparate groups are looking after, caring for the same patients, all at the same time.

The levels of care described in Chapter 1 (Level 1, 2, 3) have been zealously adopted by UK critical care and could have an impact on how patients are viewed and treated by staff. The allotted level informs decisions on where the patient is geographically located within the unit, how staff are allocated to them and what level of care they will receive. But the question of where the patient is placed in the ward also raises different issues. As intensive care and high dependency wards have developed the beds have been given numbers. So in the unit where this study is taking place the beds are numbered one to ten (ICU) and eleven to sixteen (HDU). In a number of papers patients are enacted as their bed numbers. Hawryluck, amongst others, has observed clinical staff in intensive care: “Doctor turns to bed 2 “Is there a nurse for this patient?” (Hawryluck, 2002, p.s74).

Kerr examining handover from a socio-technical perspective in an Oncology/Haematology ward hears “Bed 3 is BN. Do you know him?” (Kerr, 2002, p.130). Holland researching ritual in nursing culture and observing nursing report hears “Bed number 9 Mrs L, a thin frail lady, Waterlow scale of 14” (Holland, 1993, p.1466).



Image 2.2 Bed number TEN

This latter statement not only enacts the patient as her bed number but also in terms of her risk (level) of developing pressure sores through application of the accepted scoring system for this. From a clinical or patient perspective it might be considered that having a bed and being treated and cared for is a positive thing? Sue Baier a patient (in intensive care in the US) with Guillain Barre Syndrome (causing almost total muscle paralysis) sees it differently. Her book is entitled *Bed Number TEN* (her emphasis) and she states “I was still imprisoned in Bed Number Ten” (her capitals), “forsaken”, “in a prison uniform” and “being dehumanised” (Baier, 1995, pp27-28). What is happening with these apparently mundane, spoken and unspoken numbers which are in daily use, and thought of as *normal* by the staff working in intensive care? (Image 2.2)

Handover and the person

Sue Baier in writing about these experiences of being a patient in intensive care goes into great detail about the behaviours of the nurses, physiotherapists and doctors looking after her. Describing the interaction with a nurse who had been allocated to her the previous day when she had been “understanding and attentive” for the next shift when Bonnie was looking after another patient Baier writes “she never looked at me. It was as though my bed was unoccupied. Today I was not her patient and I was invisible” (Baier, 1995, p.78). She alludes to the disappearance of the person. “If only he (the consultant) could see me as he used to when I was with mother-as a person not just an object to be reported on” (Baier, 1995, p.172). From the patient perspective family may be seen to abandon them too. Baier writes “Just as the staff no longer saw me, Bill (her husband) was no longer hearing me. Even as he wrote the words (her requests) in his book they became invisible to him” (Baier, 1995, p.166). How the person (patient or clinician) is enacted in handover is at the heart of the following analysis chapters. Research questions and headlines of care are articulated.

Research questions and conclusions from the literature review

Research questions

How is handover enacted? (material/geographical/patient-person, hierarchies/ontology)

Where are material and social forces in handover?

What are the educational implications of handover?

This chapter has located this research within the existing literature of handover and learning in relation to handover. This literature is mostly descriptive in nature with the authors' opinions, ideas and conclusions promoted. It has been identified that multiple key elements, objects, spaces are implicated in handover, and that an examination of the intra-actions of these in order to create a socio-material account of handover in intensive care is of major interest. Rather than exploring humans as users and designers the approach is to foreground materiality. This approach is intended to reveal non-human as well as human energies and to help make visible the messiness and mundanity of everyday life in intensive care through the enactment of handover. The things of handover will also be foregrounded: patients, spaces, protocols, guidelines, nurses, handbooks, proformas, computers, bleeps, electronic records, doctors, beds, interruptions, scraps of paper, boundaries, immutable mobiles, time, rotas, timetables. Handover is examined as an obligatory passage point with

circulating flows of power, lost persons and with the potential to enact (dis)continuity within those separated rooms.

Having identified these research questions, and the issues they raise, there arises the issue of how to research them. In describing the methodology

I signpost the scholarly tradition that is Foucault's work on power and institutions but I also move on, from history and archaeology, through Actor-Network Theory to perform a socio-material analysis. The literature sets up the analysis of data through the work of Mol with the theory of multiplicity across clinical practices exposed as "the body multiple: ontology in medical practice" (Mol, 2002) and the reminder that "materials are enacted, not inert; they are matter and they matter" (Fenwick, 2014, p.48). But people matter too. What is missing from the literature is an examination of how handover is enacted across professions taking into it the intra-actions of the material, the social, the geographical to create an empirical philosophy.

Chapter 3 Methodology

Data Capture

The dead can be recorded without fuss.

It's tough to keep track of the ones who live:

who to accept and who to reject.

Some won't follow up, so there's never enough.

I suppose the best advice I can give

is to be a statistic that's hard to collect.

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Introduction

As has been discussed, this research concerns itself with how multi-professional practitioners enact clinical handover in the highly specialized context of tertiary intensive care, how these practices form different sociomaterial worlds and what the implications of this are for the pedagogy of professional knowledge and the multiple *Is* of the clinicians involved (Peshkin, 1988).

In this chapter the theoretical and philosophical orientation, approach and strategy underpinning the research is examined and explicated. How this has influenced the choice of research, the design of the study including the methods, and techniques, utilized to gather in and critically evaluate the data on handover is analysed. The act of doing this allows scrutiny of the praxis of handover and the mesh of forces encountered there. The tensions of access to the case as an *insider* professional, a senior member of staff, and the ensuing

issues of power relations and hierarchy are explored. The issues of the inter- and intra-professional nature of the research subjects and the researcher are surfaced. The development of methods of data analysis are described and the final approach is detailed. Attention is also concentrated on the ethical considerations and the practices of reflection and reflexion.

Research methodology and finding the research philosophy

It started with words. Epistemology, ontology, posit, scientism, hegemony, reflection, positivism, empiricism, paradigm, hermeneutic, interpretivism, epistemology, tautology, eclecticism, utilitarianism, casuistry. This is not a randomly selected list of words. My research journal fulfils more roles than a repository for field notes and my reflections over the course of my research journey. When I read the first paper in the taught component I realized that I was about to learn a new language. It appeared on the surface to be English but I couldn't understand it. So I opened the back cover of my journal and started a personal dictionary (writing it against the grain of the book) and I have continued to refer to it (and add to it) throughout my research. The current page has the words ostranence, quotidian, scalar, alternity, with space for only a few more. I labour this because the language and the meaning behind it, and the understanding of it, was and remains such a major event, surprise, undertaking. And it is pivotal to what I am writing in this thesis.

Firstly I will talk about my introduction to ontology, and to Foucault, together.

Why should a medically (scientifically) trained intensivist immediately embrace,

resonate, engage with the work of a French post-something-ism philosopher? In the Birth of the Clinic I found the familiar of my day to day clinical work, teaching and education not only made strange but in some senses explained. It came as some surprise to find that what I had accepted as reality unquestioningly in clinical undergraduate and postgraduate training (my ontology) wasn't a solid world but was open to rediscovery through being taken apart and observed. Take the stethoscope. A fundamental tool in diagnosis and treatment for over two hundred years. Foucault, correctly or incorrectly, suggests that it was developed to create "a moral distance to allow evaluation to occur" (Foucault, 1989, pp.201-202). And then the gaze which embraces not only sight but *palpation* and *auscultation* (touching and hearing as Foucault would have it), enabled by the examination of the dead, with their own "fixed, attentive, rather dilated gaze which, from the height of death, has already condemned life, and not with the examination of the living" (Foucault, 1989, p.210). And so the development of clinical examination into our now universally taught and applied system of inspection, palpation, percussion, auscultation is permitted by examination of the dead. By its very nature intensive care exposes those of us who work there to these "corpses" with their fixed and dilated pupils so we are in familiar territory there. "It may be *familiar* but I never cease to feel a horrible sensation in my stomach when I lift the eyelids and look and see fixed dilated pupils. That's probably why the *gaze* was so absorbing to me". (Fieldnote, June, 2013).

And there are other parallels between my day to day job and what Foucault resurrects from the archives, from then to now (Foucault, 1989, p.96). As a junior medical trainee I was labelled as a *House Officer*. When the French

teaching hospitals were set up many of the doctors came from the military so these *officers of health* were the predecessors of us house officers. In UK medical education a mantra of “knowledge, skills and attitudes” has been prevalent for a couple of decades. When you ask people when it was developed (as I *have* done) they suggest “the 1970s? or the 1980s?”. However Foucault excavates this triumvirate from the depths of French Republican history around the end of the eighteenth century as “knowledge, abilities, moral habits” (Foucault, 1989, p.96). These have been transformed into our current training frameworks. Another resonance sets itself up when I am reading about Bentham’s Panopticon. Foucault writes “The panoptic mechanism arranges spatial unities that make it possible to see constantly and to recognize immediately” and carries on “so to arrange things that the surveillance is permanent in its effects, even if it is discontinuous in its action” (Foucault, 1977, p.200-201). I liken this to observation in the intensive care unit both remotely through physiological monitoring systems visible in rooms distant from the patient, and in the direct observation of the sedated patient, physically aligned but chemically dissociated from the watchers by the drugs. And more recently in the unit under study the only entrance is locked. With a buzzer system linked to CCTV just like a prison. For safety. What about the vulnerable relatives and visitors and staff? The concept (and possibly the reality) of the panopticon lives on. As Foucault asks “Is it surprising that prisons resemble factories, schools, barracks, hospitals, which all resemble prisons?” (Foucault, 1997, p.228). But a major piece on panopticism is for another day.

So Foucault has reassembled the forces, things, activities and stuff involved in the creation of the teaching hospitals and the development of medical

education in France in the 18th Century. But he has not recognised these sociomaterialities for what they are. The stethoscope, the wards, the house officers, the rules, the tenets of teaching are described in an archaeology (not a history), but their place in the assemblage which continues to enact handover, in contemporary clinical practice, has been denied.

And in Foucault's writing, his use of language and the new concepts he created from delving back into the archives along with his identification of the materiality of discourse, "a book is a node within a network" lead me to think that an analysis of handover could inform the practice and the pedagogy of handover in the future (Foucault, 2002, pp.25-26). And then I read part of a sentence which defines me in a way I hadn't noticed. Perhaps Foucault is pointing to what professionalism is when he describes: "relations between the doctor's therapeutic role, his pedagogic role, his role as an intermediary in the diffusion of medical knowledge, and his role as a responsible representative of public health in the social space" (Foucault, 2002, p.59). So I engaged with Foucault as a potential tutor in helping to support my research methodology. Examining the professionalism of discourse might be one avenue of research or, turning it around, looking at the discourse of professionalism could be interesting. But that is not where this work is going as discourse and histories and narrative are not sufficient. In reflecting on my relationship with Foucault, and in discussing it with colleagues, family, supervisors, it is likely that I have reified him and his work. I had never *really* engaged in that level of scholarly philosophy before. But what have I gained from this? In trying to make sense of his writing and making excursions to (with?) Derrida, Maclure, Deleuze and Guattari, Freire,

Law, Carr I found myself capable of immersing in, and absorbing, the writings and ideas of other philosophical scholars and writers such as Annemarie Mol.

Foucault researched the written and the text bound. I am researching what is happening between people and objects and things in real time and in the entity which is intensive care. The adoption of an ethnographic approach could be supported by the published research literature on handover and shift report and allow a description to be made of what is happening. An analysis of what is being said, and how, perhaps based on discourse, could also be defended. But neither of these approaches, on their own or together, will bring us to the place we need to be.

Actor-Network Theory

In discovering, and developing, a method of research which can be applied to clinical handover in intensive care I considered whether analysis through Actor-Network Theory (ANT) could work. Researching the praxis of handover through ANT is supported by Fenwick's statement: "ANT focuses on the minute negotiations that go on at certain points of connection" (Fenwick, 2011, p.97) since handover is one of these *points of connection*, and the data from this study captures the fine grain of discussion and negotiation of handover, and its socio-material assemblages.

ANT emerged in the early 1980s from work in science and technology studies, with Foucault and archaeologies in its background. But differently "ANT focuses not on what texts and other objects mean but on what they *do*" (Fenwick, Edwards, Sawchuck, 2011, p.97). As Latour has put it, "using only very rudimentary tools, I simply try to present, in the space left empty by the

dichotomy between subject and object, a conceptual scenography for the pair, human and non-human (Latour, 1999, p.viii). Mol proposes that “the moral of Latour’s book ‘We have never been modern’ “ (Latour, 1993) is that instead of dialectically jumping between the ideas that reside in the minds of subjects and some objective reality *out there*, we would do better to admit that in our daily lives we are engaged in practices which are thick, fleshy and warm as well as made out of metal, glass and numbers-and that are persistently uncertain” (Mol, 2002, p.30). Intensive care practice certainly fits in with these concepts.

Fenwick further develops this in writing that “ANT studies treat all human/non-human entities as effects performed in relations, thereby decentring human intention and agency as the engine of society and history (Fenwick, Edwards, Sawchuck, 2011, p.96). A pivotal assumption is that humans are not assumed to be treated any differently from non-humans in ANT analyses. This, as moved on by Latour (1987), is *symmetry*. Or, in other words, there is an equal treatment of non-human and human elements. Law proposes that “Actor-network theory may be understood as *a semiotics of materiality*. It takes the semiotic insight, that of the relationality of entities, the notion that they are produced in relations, and applies this ruthlessly to all materials-and not simply to those that are linguistic. This suggests ...that it shares something important with Michel Foucault’s work” (Law, 1999, p.4). So Law, again, acknowledges the works of Foucault but signals the complexity of ANT. He goes on:

“Performed by the act of its naming ANT is a ruthless application of semiotics. It tells that entities take their form and acquire their attributes as a result with other entities (Law and Hassard, 1999, p.2). Writing in Pandora’s Hope, Latour pleads “I hope that I have convinced the reader that if we are to meet our

challenge we will not meet it by considering artifacts as things. They deserve better. They deserve to be housed in our intellectual culture as fully fledged actants” (Latour, 1999, p.214). This is in support of Latour’s contention that “action is simply not a property of humans *but an association of actants*” (Latour, 1999, p.182). One of the great challenges for clinicians is to move perspective from the agency of the human to allow these things of practice their rightful place.

Through the collection of my data, and the review of the literature, this crucial situation of the material, not just the words, in the messiness of handover emerged. Paper towels as floating texts appeared in the literature I was reviewing (Hawryluck, 2006). Then, when reading the transcripts, and finding literature on scraps and towels and hierarchy of use, it sent me back to look at what was happening in the ward leading to images of paper towels being sampled. And to rethink and examine their place in the assemblage of the activities of handover. Then charts and pens on ward rounds became strange after finding literature on this practice of writing on the charts. The familiar was becoming unfamiliar through searching the literature and reading it.

After ANT: emerging socio-materialities

Fenwick, in citing Law’s emphasis on the openness, uncertainty and revisability of ANT-inspired studies reinforces Law’s suggestion that we talk of “material semiotics” rather than ANT (Fenwick, 2011, p.96). This supports a move on to “afterANT”. Fenwick refers to certain strands of ANT, which “suggest that we do not simply have multiple perspectives, but that we are part of multiple worlds that coexist and overlap, often in the same material spaces” (Fenwick, 2011, p.178).

The Dutch writer Mol has developed this “as a study in empirical philosophy, the body multiple: ontology in medical practice” (Mol, 2002, p.1). She explains that it is empirical in that she observed doctors and nurses and patients in their clinical environments, listened, and discussed this with colleagues in anthropology, sociology, philosophy, science and technology. Philosophy carried her to the contention that “The driving question no longer is “how to find the truth?” but “how are objects handled in practice? With this shift, the philosophy of knowledge acquires an *ethnographic* interest in knowledge practices” (Mol, 2002, p5). And so she provides the building blocks which might comprise a framework to analyse the kind of data which I have gathered. My work is, then, an empirical philosophy. Looking at the different elements in my data Mol’s approach could inform these? As Mol would have it “Ontology-in-practice comes with objects that do not so much cohere as assemble: (Mol, 2002, p.150), and counsels “Don’t go with textbook versions of medical knowledge, but analyze, instead what happens in medical practices” (Mol, 2002, p.47).

Research approach: mixing the methods

The choice of an ethnographic methodology is informed by the need of ethnography to conduct research naturalistically in a setting that already exists in the *messy world*. Perhaps it is attractive to me, also, because it was developed as a “deliberate reaction to the dominance of positivism in social science research” Scott (in Scott and Usher, 1996, p.143). Ethnography has been associated with research involving a broad variety of methodologies and differing epistemologies. That researchers undertaking ethnographic work have

studied people in their everyday contexts utilizing a variety of methods including analysis in conversation and discourse, collection of data from a number of different sources (including written and typed data) whilst focusing on relatively small numbers of subjects sits comfortably with my methods. However “traditionally ethnographers attempted to behave like participants in the research... using a fieldwork diary for data collection” (Scott, 1996, p.152). In my case, from day one of the doctoral journey I have kept a combined fieldwork diary and research journal both in the clinical study setting and in the educational setting of the EdD itself.

Ethnography surfaces the researcher as the *research instrument*. “It’s one of subjecting yourself, your own body and your own personality, and your own social situation, to the set of contingencies that play upon a set of individuals, so that you can physically and ecologically penetrate their circle of response to their social situation, or their work situation, or their ethnic situation, or whatever. So that you are close to them while they are responding to what life does to them” (Goffman, 2002, p.149). One of the activities involved is to take field notes and there are many suggestions as to what should be included. In my study I have performed my field note taking empirically. Goffman goes on to give advice on fieldwork: “I think you should spend at least a year in the field. Otherwise you don’t get the random sample, you don’t get the range of unanticipated events, you don’t get deep familiarity” (Goffman, 2002, p.152). Perhaps doing research in ones own professional setting brings with it the benefit of many years of lived experience? There is a balance (tension?) there too. Familiarity, normalisation, assumptions.

As already stated I am a participant in the clinical activities which I have studied and made an assumption that I held an underlying understanding of the activities under study and had an innate empathy with the participants from prior clinical experience. Where this fell down is revealed from analysis of the data. In defining my role as observer Gold's widely cited and utilized typology does not fit with my method. Gold actually cites the original source as "Field Work: An Introduction to the Social Sciences (Paperback) by Buford H. Junker" but Gold gets the credit. Gold describes four participant observer field roles: complete participant; participant-as-observer; observer-as-participant and complete observer Atkinson (1976). The last is closest to my actions where "researchers adopt a passive role and concentrate on minimizing contamination of the setting". I was so aware that my physical presence might influence the handovers by stifling the participants into sanitizing their discourse that I set up the recording in the rooms for them then left the scene completely to allow them to get on with it. Reading the raw data will help you to assess whether this researcher leaving the scene approach was successful and worthy of use in future research studies. Like many before her Savage has posited the defining feature of ethnography as "the use of participant observation" (Savage, 2000, p.1400). This is taken to mean direct observation of the case as it is studied. In my day to day (and night) work I have extensive experience (many hundreds of hours) of participation in, and observation of, handovers between doctors and nurses. Is this legitimate as a form of professional pre-ethnography? Marcus (1986) cited by Savage (2000, p.1401) argues that "the knowledge generated by an ethnographic approach is strongly shaped by the nature of the relationship between the researcher and the researched". This will be explored

further when I consider reflexivity. In her paper entitled “Ethnography and health care” Savage introduces ethnography to the broader medical community (Savage, 2000). It was published in the British Medical Journal which is available generally but is a benefit of membership of the British Medical Association so is mainly read by doctors. Savage is a senior research fellow with the Royal College of Nursing and deftly negotiates the divide between quantitative and qualitative research whilst bridging from nursing to medicine at the same time in her piece. By skilfully starting with a sentence supporting evidence based medicine she gives herself a chance of getting the scientific doctors to read on. She clearly describes ethnography and raises how it might be “applied to healthcare issues” (Savage, 2000, p.1402). What is missing is any real discussion of theoretical perspective. And the ethnography described is very focussed on culture with a variety of views on the significance of artefacts. It is as if the act of conducting the research is an end in itself. Perhaps this is on purpose as wading in with such concepts as interpretivism, post structuralism, post-modernism might scare off (even interested) clinicians. But with the change in epistemological emphasis encouraged by Mol the driving question no longer is “how to find the truth” but “how are objects handled in practice?” (Mol, 2002, p.5) continuing “With this shift, the philosophy of knowledge acquires an ethnographic interest in knowledge practices linking ethnography to sociomateriality” (Mol, 2002, p.5). Savage highlights an ethnographic study of clinical reasoning in a professional group (haematologists) and summarises “Atkinson raises important issues about the use of algorithms and decision making models within medicine and whether these acknowledge the complexities of practical work and clinical reasoning”

(Savage, 2000, p.1402). So the next step which it could be argued should be taken is to consider how, as Fenwick observes, “objects (in the case highlighted by Savage algorithms, decision support tools) and humans (in this case haematologists) act upon one another in ways that mutually transform their characteristics and activity” (Fenwick, 2014, p.44).

In developing an approach like this Mol has eruditely, and scholastically, reviewed, critiqued, worried, linked the literature that “has some authority on medical ethnography, medical sociology, medical history and medical philosophy” (Mol, 2012 pp 1-27). Although she performs an historical writing herself she is clear that in her approach to her research this was not the case “I do not go into the history of the diseases I describe. I even flatten out most of the changes observed over the few years of my fieldwork. What is important to note now is that this book does not go into history” (Mol, 2002, p.25). In relating to the literature she is laying to rest some of the *pivotal* writings of the past in order to frame her own writing. In the first two (very short) sentences of Chapter One of the body multiple Mol uses the term empirical twice and again on page 4 where we find the crux : “For even if there are a lot of empirical materials in this book, this is not a field report: it is an exercise in *empirical philosophy*” (original emphasis) (Mol, 2002, p.1). So she moves on from traditional descriptive ethnography to what is being done, how disease is being enacted. And she expands “This is the plot of my philosophical tale: that ontology is not given in the order of things, but that instead, ontologies are brought into being, sustained or allowed to wither away in common, day-to-day, sociomaterial practices. Medical practices among them” (Mol, 2002, p.6). And that is where this research finds its philosophical direction.

Selection of the research subject and the place

Over the course of my career handover has been a constant activity in day to day patient care. I arrived at the first EdD taught days with a preconceived idea of my research involving the study of intensivists' non-technical skills. I had been peripherally involved with the ANTS (anaesthetists' non-technical skills) project (Fletcher, 2003) therefore recognizing the importance of the key elements of team working, situation awareness, task management and decision making in clinical practice. Within the first two taught days I realized that this was not the direction which I would pursue. My first assignment, the literature review, was located around interruptions in intensive care and in researching this area handover emerged as an area of major interest across high reliability industries but with little empirical work in healthcare. Since that time, as described earlier, there has been an explosion of publications on handover in clinical practice but most of this is descriptive and normative. Indeed my original sub-title for this thesis was "an exploration of the *nature* and *narrative* of clinical handover in intensive care". From this I could have created an ethnographic description of handover, a story about the analysis of the discourse of handover, but instead the chosen analysis is to listen to the subjects as their own ethnographers telling how handover is done, enacted, in practice.

I decided to locate the case-study in intensive care, my own area of clinical expertise, for both practical and scholarly reasons. From experience in working in this environment it was evident that some issues of concern to me as researcher were present, and indeed had been identified empirically during standard clinical work. The implications for poor handover on patient care and

safety (in general) have been highlighted in the literature review but there is a lack of information on the enactment of handover in intensive care.

The research context: detailed consideration

The intensive care unit studied as this case is in an urban tertiary specialist referral hospital in South-East Scotland. It was opened in 1988 and the unit was originally created as one of two separate six bedded wards situated close by the Coronary Care Unit and sharing various facilities. Several of the single rooms were originally designed and built for purposes other than patient care such as offices, relatives' accommodation, a procedures room. Since then, the ICU has expanded to sixteen beds and Coronary Care has moved elsewhere. In order to achieve this expansion all of these non clinical rooms have been converted into patient accommodation by the provision of sinks, curtains/screens and piped medical gases (oxygen and air). These two gases are necessary to provide patients with the appropriate amount of oxygen they need from 21% (as in air) up to 100% oxygen. There are now two electricity supplies. One is the original of domestic standard and the other *on the loop* is linked to the back up generator which will (should) kick in if the standard supply is interrupted. It has been known to fail. Life sustaining and other critical equipment such as ventilators, haemofiltration machines, patient monitors are run off *the loop* and the designated sockets are coloured scarlet to distinguish them from the standard system. The presence of these materials, and the patient, the nurse and the doctor turn it into an intensive care room. But the underlying bricks and mortar are still as they were in their old guises when the unit was first built. The unit provides services and support for patients in

Lothian, Borders, Fife, Forth Valley and Dumfries and Galloway and for some specialised services it covers all of Scotland. Patients under the care of many disciplines are admitted: Neurosurgery and Neurology, Haematology and Oncology, Colorectal and Urological Surgery and a broad range of medical specialities including Infectious Diseases, Respiratory Medicine, Medicine of the Elderly, Stroke Medicine, Rheumatology, Cardiology, Dermatology and Acute/General Medicine. The reason for unpacking this list of specialities in detail is to make visible the large range of knowledges which the staff in intensive care must engage with: that of the subject matter experts, the patients and their carers and also the knowledge of individual diseases, their complications, natural histories and the definitive treatments for each. At the same time they require expert knowledge of the supportive, life saving, measures available in intensive care. As staff in the ICU all of the participants in this research project work together to care for this disparate group of patients and interact with the clinicians from their *parent* specialities. However this study is not about perspectavilism, but as Mol proposes it “consists of foregrounding practicalities, materialities, events” (Mol, 2002, pp.12-13). The physical journey to intensive care varies enormously from patient to patient. For some, it is from the community, usually via the Emergency Department, within hours of onset of critical illness. Others will be taken to the operating theatre for surgical treatment and stabilisation first. Examples of these include patients with ruptured abdominal aortic aneurysm in haemorrhagic shock or perforated bowel in septic shock, and mothers with major obstetric haemorrhage. Many patients come to intensive care from the hospital wards, commonly due to sepsis or respiratory failure, and may have been in hospital for days or weeks. These,

sometimes convoluted, entry routes could be regarded as threads in the patient's often turbulent journey, involving the data reduction through the eye of a needle which is handover?

Let us consider where the multiple handovers of intensive care occur in this unit: in separate spaces, behind walls and through walls, segmented and fragmented. This is how it happens here. Every twelve hours this process repeats. So the act of clinical handover in intensive care involves multiple elements in space and time. The rooms, the artefacts of physical handover: the wall mounted board, the computer, the handover sheets, the bleeps. A socio – material interaction is enacted between at the least two clinicians, members of staff for bedside patient handover, and for unit handover. At the other extreme some unit handovers involve eight or nine staff members.

Once all of the individual handovers have been completed the business of the day (or night) then begins with the different players in the disparate handovers now working together for the next 12 hours. How handover plays into this will be examined.

Research design, participant selection, data collection and data generation

By direct observation of, and participation in, handover in the intensive care unit chosen as the field for research three planned and structured handover events were identified as occurring between changes in shifts and on call staff.

In order to optimally capture and analyse the data from these a mixed methods approach was adopted incorporating an ethnographic model. However

although one of the established traditional tenets of ethnography central to anthropology “carrying out such work, ...in a society very different from one’s own” (Hammersley, 2007, p.1) is not uniformly present. What I mean by this is that the clinical context and the medical handover are part of my everyday practice as an *insider* but that part which is not is that of the nurses. Having said that, the overall context and the patients are shared. The medical/nursing difference was not one which I had explicitly identified before starting the data collection but it became clear, as I listened to and transcribed the recordings, that it was easier to make things strange from the nursing handovers particularly between the nurses in charge of the intensive care unit. Standing back and regarding the handovers from the perspective of an outsider was challenging but felt integral to the development of my analytical approach. There are a number of facets to this. The physical space and the equipment are all familiar to me. But as I have spoken about these with others from outwith healthcare (particularly my fellow students, my supervisors, my friends including patients and relatives) and have listened to other researchers present their work I have become able to look at these physical entities in a different way, to unfocus as a doctor and to focus as a researcher. Rather than approaching observation of handover and the unit as a visiting healthcare professional since I have been in the position of being a relative of critically ill family members I have tried to use that experience as a lens to refocus. By relating the findings and ideas from the literature which have emerged from the review and then taking the ideas and thoughts generated by this back into the immersion of busy daily practice I have started to see the strange in what we take for granted. Reading Angus Ogilvy’s poems has also helped me to defamiliarise

commonplace objects like pumps, blood, alarms, an estrangement of the familiar. (Image 3.1)



Image 3.1 The social and the material of ICU

Participant selection

Each handover process usually takes between fifteen and thirty minutes. A sample of handovers from each staff group was chosen. The sample distribution was chosen to allow a mixed group in terms of both profession, seniority and experience to be studied. In calculating the initial sample size the aim was to include handovers involving many of the medical trainees, senior nurses and consultants in the intensive care unit along with a group of nurses at the bed side. However, as previously intimated, following transcription of the

first handful of recorded handovers it was recognized that this sample size was too large as it would have generated an unwieldy excess of data. So in a move to limit the amount of redundant or unused material, an important consideration from an ethical viewpoint, the initial plan to record twenty handovers was changed and in the end ten recordings were made. The criteria for choosing these were pragmatic: all recordings were in rooms to assure privacy; all involved patients whom I had been recently responsible for clinically; all recordings were achieved when I was not on clinical duties so that I could give my uninterrupted attention to the participants. What is missing then is consultant to consultant handover as this is done as a walk round the unit. Bed space nurses were chosen by bed number with those in single rooms targeted for practical recording purposes, confidentiality and to reduce embarrassment. Patient consent was not considered necessary and in any event as all of the individual patients being handed over were intubated and sedated on a ventilator they were incapable of providing consent. Nurse in charge handover and standard medical shift handovers happen off the ward and were recorded in the charge nurses' office and in the doctors' room. Wednesday evening and Wednesday morning handovers were recorded at times when I had been on call and had clinical knowledge of the patients to help inform the analysis. The participants were therefore pre-determined by the duty rosters and the nursing off duty. Different individuals were chosen for each recording. Names have been changed to maintain confidentiality.

Ten handovers were recorded over a nine month period and the basic information on these is listed here.

Handover 1 Charge nurses Jane to Heather

Handover 2 Trainee doctors Jackie to Susan

Handover 3 Trainee doctors: Alison to Ruth

Handover 4 Trainee doctors Sayeed to Neil and Joan (registrar)

Handover 5 Trainee doctors Ian to Angus and David registrar

Handover 6 Bedspace nurses Mike to Callum

Handover 7 Bedspace nurses Nancy to Julie

Handover 8 Charge nurses Gavin to Heather

Handover 9 Trainee doctor Ben to trainee doctor Emily, registrar Brian, consultant Steven, consultant James

Handover 10 Trainee doctors Allan to Ahmed and Richard (registrar)

Details of who all of these individuals are can be found in Appendix 1.

Staff had been made aware by word of mouth, written letter, email, the intensive care unit newsletter and the staff communication books that the study was happening. Individuals were approached by myself on each of the days when data recording for the study was active. Staff were invited to participate in the study verbally and written informed consent was secured at this point. More on this below. No one declined to participate. Access to the unit and the staff was not a problem (my assumption) but hierarchy/authority might be? I know all of the staff and they know me. I am a senior figure on the unit. So I am already

an embedded, naturalistic participant member of the community. Physical access is not an issue. I am allowed to be here, I have a badge and an electronic access device. But I am legitimate as a clinician, not as a researcher. Yet the staff I am asking to participate in the research project are the same staff whom I interact with every day and who look to me for answers, for support, for leadership. What protection is there for them? What ability do they have to decline my request to participate and be recorded? I will expand on this when I consider ethics.

The fact that I am going to listen to recordings from the staff involved might influence them in what they say and limit the robustness, and the genuine nature of the data. My own personal biases may also contaminate my analysis of the data. I needed to be reflective on these as I performed my data analysis and wrote up my findings.

Data collected

The practical mode of data acquisition of verbal handovers was by live audio-recording. As well as this other data collected in this research includes printed Wardwatcher handover report sheets, images of the doctors' room board and images from around the unit where the study was conducted. When handovers were being audio-recorded, as the researcher and a senior member of the clinical team in the ICU being studied, I made a conscious decision, unlike in many ethnographic studies, to be absent. This was to try to optimise the authenticity of what was being said in the handovers. At the same time I knew the patients in the unit and have participated in many handovers so felt that these factors could help minimise my misinterpretation of the data when

undertaking the analysis. The recordings were made using a digital audio-recorder. This was chosen to allow optimal voice acquisition in the potentially noisy intensive care environment, both for accuracy and to allow tone of voice and subtle noises (coughs, laughs) to be heard. During the initial recordings a standard tape recorder was also deployed as *back up* in case of failure of the digital recorder. Audio files were directly downloaded onto a computer and played through an electronic media player allowing transcription of these into note form. Hawryluck has suggested that audio-recording has benefits over other techniques which have been used in similar contexts such as written notes or direct observation with annotations onto pre-prepared tables (Hawryluck, 2002). The whole discourse is available for analysis and for repeated listening. In particular how things are said and *what isn't said?* can be identifiable. In this case the clinicians were given the recorder and then the researcher left them until the handover was completed.

Images and words

From a clinician observer-participant view the associated objects and the practices of handover in intensive care seemed to me (prior to this research) to be mixed together. As Mol (2002, p.159) states “objects enacted and practices ...belong together. They are intertwined.” (Mol, 2002, p.159). Indeed Mol goes on to foreground this stating that “the axis of difference needing further exploration is between versions of objects and the (science related) practices in which they are enacted”. How then could I enquire and look into this and at the same time let the reader know what was what and what was where? So I looked at the practicalities of handover. A number of images are included

through the text of this thesis to illustrate the physical spaces and where the materials are located within them. A schematic plan of the unit gives an idea of how the handovers are related to each other geographically. All of the staff use some form of written or typed record during handover. These might be categorized as official documentation and personal scraps of paper, and how these are enactive of the handover is of interest. As previously described those clinical staff involved in handover of the whole ward (involving all of the patients) use the computer generated Wardwatcher Handover Report sheets. The doctors and the nurses in charge use these official documents containing demographic and free text information about each and every patient in the unit. During handover each individual adds their own written notes and scribbles. At their handovers of one or two patients many of the bed space nurses use scraps of paper or paper towels to support handover and to record questions which they generate about their patients. These were sampled (chosen randomly during ward rounds) and photographed then analysed not in terms of their narrative or discourse but by how they act in the practices of handover, care of patients and the inter-activities of professions. Where all of these different floating texts come from and what they do is as Mol suggests “a topic rather than something to be taken for granted” (Mol, 2002, p.177).

I have also gathered photographed examples of patient bed-side charts and some of the equipment of intensive care. These are included to signpost an exploration of how they relate with handover and inter-professional working. But that is only a first step as this may be an area for sociomaterial study in its own right.

In the activity of research we may also create our own scraps, as illustrated by this note from my research journal: “I had forgotten to put my notebook on the bedside table so when I woke up around 5am with ideas so I used the first piece of paper that came to hand” (20/7/ 2013) Image 3.2.

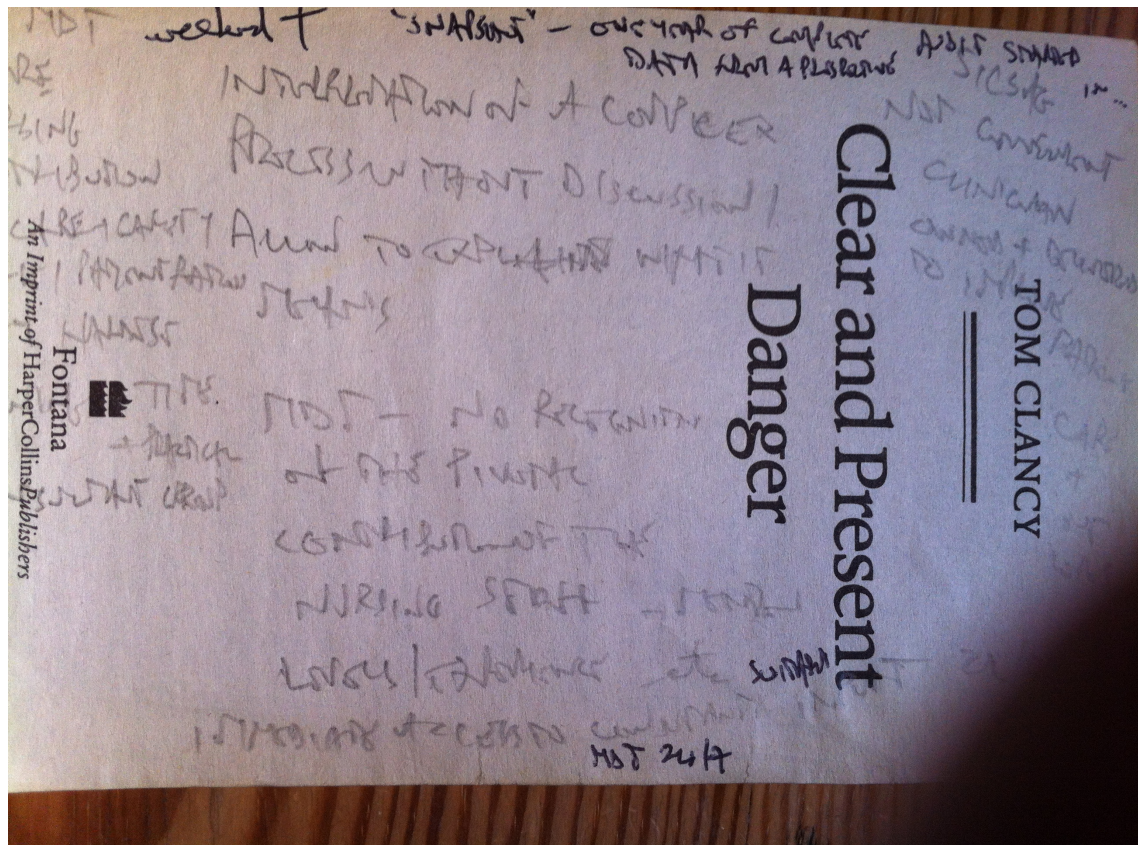


Image 3.2 Clear and Present Danger

Boards without meetings

The doctors' room and each side of the ward have separate white boards with a plan of the ward and the names of the patients. These latter could not be included as images due to the need to maintain patient confidentiality but an accurate facsimile mock up of the board in the doctors' room was created to demonstrate the kind of data which is available during the handover. More and

detailed attention is paid to this and the other boards in the chapters of analysis.

Transcription

Transcription of the recordings was anticipated to be an enormously time and labour intensive activity, and it lived up to that. Could I have had someone else do this? Yes but what would have been lost in doing this? The value, for me, in listening to every second of the handovers as I transcribed them is in the nuances of non-speech, of how things are said, of the pause and particularly in searching for that which is not said. To consign the recordings to be typed and then read by me would have meant that I lost a lot of what was actually happening. And to insert it into a software programme for *analysis*? I made a deliberate decision not to do this. An additional factor in personally transcribing the data is that since I know all of the participants who have been recorded there was an opportunity to hear how they were feeling about the patients and themselves. Since the aim of this research was to observe closely, to say more about less, and to be specific rather than generalize, a larger sample was not deemed necessary although the possibility of bias needs to be incorporated into my reflexion.

Ethical considerations

The participants in this research are clinical staff in the intensive care unit who are involved in the process of handing over: bed space nurses handing over an individual patient; trainee and consultant medical staff handing over the unit; senior nurses 'in charge' handing over the unit. Local managerial approval was

sought and gained and the study was actively supported by the Lead Nurse and the Clinical Lead Consultant for Critical Care as well as all of my colleagues across the professions. When a handover was identified as having potential for recording the participants were approached and given a verbal request to provide consent then a printed information sheet and consent form to sign. Both of these had been circulated to all staff prior to the commencement of data collection. See Appendix 2.

The research involved educational, University of Stirling and National Health Service issues. It required ethical submissions to the Institute of Education Research Ethics Committee at the University of Stirling and to the NHS Research Ethics Committee via the National Research Ethics Service (NRES), a sub-division of the then active National Patient Safety Agency (NPSA). I registered with NRES and took the proposal through the national process when it had metamorphosed into the Integrated Research Application System (IRAS NHS R&D) and through the Local Regional Ethics Committee. From my research journal dated 18/2/2009 about my attendance at the Local Research Ethics Committee:

“LREC

Well. Interesting. Huge table.

15 folk. No intros. Name plaques which are not visible.

Active discussion audible to me.

Worries over the participants.

Alter the participant information form. They will write to me.

-Power”

I sat outside the boardroom waiting to go in. A heated discussion for and against my application, lasting about 15 minutes, was clearly audible to me. I was invited in and given a seat on the corner of the large square of tables sitting obliquely to the chairperson. There were no introductions as to who people were and what their remit was on the committee. I could make out a couple of names in front of the committee members but most were not visible. Their main concern was over the participants in the study. To my surprise this was about the staff. I had anticipated that it would be about the patients. A lay member of the committee and a surgeon had a head to head about this, the surgeon defending my corner. I realized that these were the two who had been arguing before I had entered. After a while another member of the committee interjected, smiled at me and introduced himself. The issues were resolved. I was advised to make minor amendments to my paperwork and told they'd be in touch. I was asked if I had any questions. I said “no” but I did feed back on my having heard their discussion prior to the meeting. I said that as an experienced professional I was able to cope with this but that if I had been a young researcher, perhaps non-medical, it would have been very intimidating. I also informed them that I had been in the selfsame room many times before, on their side of the table, as an examiner or teacher and doing job interviews. I suggested that introductions and a different seating position would be appreciated by those defending their research ethics applications. The chair apologised and said that they would write to me. I wrote the word power baldly

on its own in my journal but recall that Foucault's writings were flashing around my brain. A kind of panopticon? As Foucault would have it "a privileged place'...a kind of laboratory of power" (Foucault, 1977, p.204).

I adhered to the BERA Revised Ethical Guidelines for Educational Research (2004: accessed 28/12/2007) and accept the principles laid out in that document. I also acted in accordance with my professional code of conduct as stipulated in Good Medical Practice from the General Medical Council (2013), p.30):

"71 If you are involved in designing, organising or carrying out

research, you must:

put the protection of the participants' interests first

act with honesty and integrity

follow the appropriate national research governance guidelines and the guidance in research: The role and responsibilities of doctors".

Informed consent and power

Fully informed consent was obtained from all participants in advance of their participation, both verbally and in writing. All participants were postgraduate qualified clinical staff, all working full time in the Intensive Care Unit and employed by NHS Lothian. The study was explained to them verbally and they were given an information sheet to read. A specifically designed consent form was completed by every individual participant. My combined roles as a practitioner and a researcher in my own clinical area brings to bear issues of

power and of conflict between the dual roles There is a distinct possibility of the creation of, or at least the perception of, *authority gradients* in that I was seeking consent from trainee medical staff and nursing staff with whom I work clinically. It was crucial that they neither felt coerced nor expected that involvement could result in incentives such as improved references. They were informed of their right to withdraw from the study at any time. Those staff who appear in images (Image 1.1, Image 3.1, Image 4.1) have given their permission for these to be used. Angus Ogilvy has given permission for the inclusion of his poetry.

The issue of consent from/of patients in intensive care research is huge. All of the patients being handed over at the bedside in this study were either unconscious because of their underlying illness or sedated, and often both, so unable to give consent. Their treatment is covered by the provisions of the Adults with Incapacity (Scotland) Act 2000 asp 4. In completing my Research Project Request for Ethical Approval for the Institute of Education I answered the question “Will children or vulnerable adults be involved in the research?” with a “no”.

Confidentiality

It was made clear to the participants that the recordings are confidential and anonymous and that staff would be identified by codes and pseudonyms: senior doctor or nurse, trainee doctor. Handover artefacts (Wardwatcher reports, paper towels, charts, the board) were anonymised. All transcribed material was anonymised and participant and patient confidentiality was maintained at all times.

Storage of Data

Both clinical information and recorded materials have been securely stored.

The audio recordings were transferred onto two NHS password protected desktop computers and onto the secure hospital server. The recorder was stored in a locked cupboard and accessed at the time of transcription.

Outcomes

Participants will be informed of reports and publications arising from their participation and given access to the same. The staff of the unit will be given access to the thesis and the conclusions and recommendations will be circulated.

Analysis of the data: how I got to now

This section considers the methods of analysis with which I engaged and developed to prepare then examine the data generated by the mixed methods of data acquisition including the recordings and the gathering together of the things of handover: words, artefacts and images. The central component of the textual data are the transcripts of the audio recordings. Analysis of this script was carried out by reading and re-reading it whilst listening to the original recordings at the same time. Based on the research questions a detailed thematic analysis was undertaken looking at the interactions, intraactions of the sociomaterial and as Mol has it “foregrounding practicalities, materialities, events” (Mol, 2002, p.113) to tell how handover is done in practice.

I have been researching in familiar clinical and geographical territory and have recognized the need to have an awareness of my own assumptions and maintain a sense of reflexivity throughout this research journey, and of revisiting these frequently. In particular I realised that I should look for the unexpected whilst attempting to see my normal, daily workplace and colleagues in new light, through different eyes. I have tried to adopt the persona of the visitor naïve to intensive care and to see it through their eyes, to estrange the familiar, as Maclure concludes “the familiar could not be looked straight in the face...it had to be viewed awry” (Maclure, 2007, p.47). The immersion of my thinking in, and the enacting of my data analysis methods from, the depths of my underpinning philosophical turn could and I hope will help me to unpack the new and redefine the known as strange, giving the data an empirical materiality that wasn't apparent before.

The data analysis has been physically facilitated by the recorded handovers which have been transcribed and listened to and read in conjunction with the other artefacts of handover described earlier.

My initial approach to the analysis of my gathered data was to apply a particular form of discourse analysis distilled from the works of Foucault. In my field journal dated 17/12/2007 it reads: “I have struggled with the concept... and getting the writing started. But.... Today- the epiphany. Of course it has to be Foucault-discourse-deconstruction-power”. My plan was that the literature review and the accrued data would be constructed into an *archive* such that there could be “a discourse on the individual” but from numerous perspectives. This would have allowed the construction of a genealogy of handover. I had

planned that statements, *enonces*, would be analysed with the creation of the patient as object, creating their existence through enunciation to be explored. How the staff *subjects* create the patient and themselves was to be analysed and the way in which elements of significance in space and time (then, now, when) and power would be explored. My interest in metaphor encouraged me to apply it as a hegemonic tool to influence perception and interpretation (Inns, 2002) and as a tool for deconstruction and questioning of embedded assumptions. Having said all of this the plan for the analysis of the data preceded the acquisition of the data. As Richard Edwards said at an Institute of Education seminar in October 2006: “the idea of the objective researcher has been abandoned”. Keeping this in mind I am alerted to my subjectivities in my reflections on, and analyses of, both the data and the research process as a whole.

And so 2013 arrived. I had made little progress with my data analysis. The toil of transcription complete there were multiple facets appearing as I engaged with the data: construction of the patient and of the staff, relationships with others around the hospital, boundaries and spaces in the physical world, patient safety, interruptions and finality (death). A thematic analysis of the texts utilising a manual colour coding system was performed and a conscious decision was made not to use a commercially created software for analysis. The themes (codes?) generated through this process include person/human, power, humour, emotion, justice, *différance*, what was unsaid, that which was intentional/unintentional, cognitive dispositions to respond, praxis. The associated images and artefacts were considered in alignment with the written materials. Having worked through this process my approach to data analysis

utterly changed with my introduction to the emerging conceptual and methodological orientation of the sociomaterial. I realised that I was trying to make the data fit the theory rather than using the theory to interrogate the data and that an ethnographic approach was more appropriate than any of the forms of discourse analysis. Much of what I had conceived and written up until that point became redundant and has been jettisoned to be replaced (in the analysis) by new ideas and words. And then I was introduced to the work of Annemarie Mol. The data which I had collected was from people, and from objects and from things encompassing as Fenwick places it “both material and social forces... mutually implicated in bringing forth everyday activities” (Fenwick, 2014, p.47), in this case handover. So I am adopting sociomaterial practices with the implicit understanding that, as Fenwick proposes “all materials or, more accurately, all sociomaterial objects, are in fact heterogeneous assemblies. They are gatherings of heterogeneous natural, technical and cognitive elements” (Fenwick, 2014, p.47). In reporting the data short extracts from the transcriptions are presented and the analysis is enacted through these with appropriate images embedded in the text both as illustrations and as contributors to the analytical process. In the sections on the objects the images lead the analysis but interactivity between the objects, the images and the text is exposed and displayed. In sociomaterial terms the images and the researcher enact the analysis.

Reflexivity

At the beginning of the Ed.D. I struggled with this. Having been trained in the scientific empiricist paradigm, having performed research in that idiom and

having written an M.D. thesis (Nimmo, 1996), it became clear to me that this is a thin sliced approach (as traditionally carried out in medicine) and areflexive. As Usher would have it “so long as the right methodological procedures have been properly applied, questions of reflexivity need not be considered” (Usher, 1996, p.10).

Even my interest in, teaching of, and writing on, clinical decision making and improving diagnosis within the practice of Medicine are based in/from a positivistic cognitive psychological approach (Croskerry and Nimmo, 2011).
What to do?

So, I bought a new Moleskine notebook and wrote at the top of the first page:

RESEARCH DIARY: EdD MARCH 2006 -

I have written thoughts, ideas, summaries of discussions, papers, tutorials, meetings, facts, some prose and poetry, advice (some taken and some not, often regrettably). I have drawn diagrams and mind maps and have created a personal dictionary all of which melds into a journal of reflections and applied reflexivity. I have gone back through it and to many specific parts over and over again. In my first entry thinking about Assignment One I wrote “Over the last couple of weeks I have been thinking about my work clinically and teaching & what aspects might be suitable for qualitative research”. Going through the subsequent pages I find many of the ideas and practices which I have learned and now apply (most of the time): reading against the grain; surfacing your assumptions; looking for what is missing in both the written and spoken word; unpacking; deconstruction, Peshkin’s multiple “Is” and situational subjectivity

(Peshkin,1988). And more recently (in 2013) reflective not argumentative, familiarity and making it strange whilst making the strange familiar; enactment; agency; multiple ontologies. As I leaf through the diary/journal I also find evidence of distractions and self interruptions to the work in hand. Forays into the works of Friere, Derrida, Deleuze and Guattari because of surges of interest and resonances with my own ideas. Then reflecting on this habit. “Going off at tangents and why?” as (MacLure, 2007) puts it. In order to find this work I had gone off at a tangent..... This also fits with the subjective clinical intensivist I am as described by Maclure paying “attention to fragments, details and marginalia” working with a “confusion of opposites such as reality and representation, light and dark, life and death, surface and depth” (Maclure, 2007, p.46).

Throughout my reading and writing I have actively engaged with interesting concepts and ideas, scholarly writing and new words, whilst trying to see and feel what this has to do with my work both as a clinician and as a researcher. Rather than simply reflect on, or describe, my reflection I have extracted a few passages from my journal, some demonstrating scholarly progress and others surfacing how humour can accompany the hard bits, as it must in intensive care. But before that a bit of personal history which must have had an impact on this work.

The environment which we have taken for granted

You walk into the ICU as a relative or friend and may be awestruck by the environment. There are machines and monitors, pumps and drips, tubes and drains everywhere. In 2010, just before Christmas (and our daughter's

birthday), my wife had a subarachnoid haemorrhage (bleeding around the brain). She was admitted to the hospital in which we both work. She didn't need to be admitted to intensive care but required CT scans, monitoring, lumbar punctures and so on. We were on the other "being cared for" side of the relationship (and it was done very well). When I returned to work I was not sure how I would feel returning to the ICU knowing there were several patients there who had suffered subarachnoid haemorrhages. I walked in and immediately felt that I was back in my natural habitat, comfortable, at ease, amongst friends. This is *our* normal but it is anything but that for the patients and all those around them displaced from their usual versions of normality. My reflection takes account of that experience.

18/5/2006 in my diary: whilst reading Hart (1998, 2001) I wrote: "I need to acquire understanding of implications of methodology ; need to identify the methodological implications of a study, map out the approach regarding theoretical and methodological traditions."

8/4/2006 At taught session: "Risen without trace" courtesy of Julie Allan

22/05/2006 in my journal: "Interruptions. Interventions. Disturbance. Distraction. Deflection. deviations from predicted clinical course. Breaks. Handover. institutional change". (original case)

07/04/2006 in my journal "Well art is art isn't it? Still on the other hand water is water. And east is east and west is west and if you take cranberries and stew them like apple sauces they taste much more like pears than rhubarb does". Marx (Groucho not Karl)

And finally (from the beginning)

9/4/2006 Module 2 (eight weeks into the EdD) I wrote in my research/field journal:

“Discussions: I have found the discussions, sharing of ideas refreshing and developmental. Building on Allan’s metaphor of systems: systemic review rather than systematic review. Touching the whole system by touching a part of it. I suggested that the process we are going through could be likened to a supernova expanding then eventually contracting to a manageable size. This could then become a black hole!

Maybe a better metaphor is the plant/flower one? We are growing rhizomically in three dimensions (and add time) as knowledge and ideas and consternations move out into space like a tree or bush growing water, food are mainstream inputs with books, articles, discussions, quotations, tutorials contributing. The excursions into philosophy and ethics and sociology literature, into some pure or theoretical could be regarded as micronutrients or trace metabs. (metabolites) Necessary for the whole to work but initially apparently irrelevant. Once we have gone through all of these we need to *focus*, concentrate and aim for the magic 60,000 words. That is where the bush/tree bit comes in again. We have to prune the peripheries, the edges which concentrates growing and development and activity in the centre to achieve the final good and goal, in our case the EdD.” And where am I now?

RESEARCH DIARY: EdD MARCH 2006 – January 2014

Conclusions

This chapter has charted, and described, the search for, and finding of, a methodological framework and research philosophy through the work of Foucault leading into that of Law, Latour and, after actor network theory, the sociomaterial with Mol. A mixed methods approach was designed, and this is demonstrated, and the choice of the place and subjects of the research into handover explained. Data collection and analysis are laid out. Ethical considerations including power, confidentiality and the practices of ethics committees are raised. Reflection was based on the research diary and the contemporaneous reflections collected within it.

In the next two chapters the findings of the analysis of the data are presented.

The first chapter of analysis explores the enactment of handover through an elaboration of the multiple practices and ontologies which are revealed from the data. The role of the artefacts involved in handover is explicated, along with an analysis of the geographical effects of the spaces of handover. There follows an examination of the enactment of the person, the patient through the material assemblage of handover.

The second chapter of analysis focuses on the *others* of handover, whether they are electronic patient records, clinical staff around the hospital, relatives, monitors. The enactment, through handover, of the *outliers* of intensive care is surfaced. The pedagogical placing of handover, and its importance for clinical education and learning, are uncovered.

Chapter 4 Handovers in Practice in Intensive Care

Multiple Morbidities

Multiple co-morbidities –

the term they use to capture

all the ways that nature

fashions for us how to die.

The cancer didn't get him

but the diabetes did,

that unpredicted stroke,

the virus lying dormant,

an infection in the throat;

or perhaps some unattributable malaise

accumulated down the years -

the persistent aching emptiness of love -

finally let him get away,

and multiple morbidities

are gathered in as flowers

©Angus D.H. Ogilvy August 2010

Introduction

In this chapter the enactment of the event that is handover in three different spaces and between three different professional groups is unravelled. The geographical layout of where the handovers occur is described and illustrated. The historical and practical reasons why these practices have developed are explored. The data reveals two overarching aspects.

Firstly there is an exploration of the multiple practices of handover of the three individual groups of staff involved, charge nurses, bedspace nurses and doctors. Differences are outlined and how handover is practiced in/by these different professional groups is discussed. Multiple intra-professional, in contrast to inter-professional, discourses and practices are found and discussed. The active role of the artefacts involved and the fragmentary effect of the spaces within which handover happens are then explicated.

The second key theme is that of the enactment of the person/patient in handover as cared for, cured (or not), as a diagnosis/disease, as co-morbidities. A crucial element in this is the emergence of a level of care hierarchy differentiating the value of the patient through the discourses and practices of handover. This will be explored. Following the analysis of data, the implications for professional practice and professional education are discussed.

Handovers in intensive care

Intensive care: what does that mean? In practical terms it is a place, a service, an intra-action of people, machines, equipment all in a designated space. Add to this the dimension of time: this care is provided (given) for twentyfour hours

every day of the year, apparently, continuously. The patient is there throughout the twentyfour hour period but not the staff. The majority of the staff are nurses who work twelve hour shifts from 8am until 8.30 pm with responsibility for one or two patients during that period. The senior nurses who *take charge* work a similar pattern, whilst the trainee medical staff work a variety of different shifts. When on a *long day*, they start at 08.30am and work for twelve hours. Their standard *day shift* also starts at 08.30am but finishes at around 5pm. They work runs of nights from Monday to Thursday and from Friday to Sunday. These start at 8.30pm and finish with the end of handover at around 9am the following morning. The senior trainee medical staff (registrars) either work standard *day shifts*, *'late' shifts* (11am until 9pm) or nights. The consultants work in a different way. There are two on duty daytime Monday to Friday (8.30-am to 6pm-ish). One does a run of days from Monday to Friday and the other is on for a twentyfour hour period once every fortnight. At weekends the twentyfour hour on calls are shared equally across the consultant group through the year. All of the nurses and trainee doctors do 12-13 hour shifts so there is a difference there.

From this description it can be appreciated that there is an obligatory requirement for a large number of handovers across any twentyfour hour period. Handover can be posited as an obligatory passage point through which the linkages of a jumble of networks connect. These linkages of assemblies are positioned as shifts shifting from night to day and back again. The majority of the elements that go on in intensive care are assembled here either explicitly or implicitly. On every single day and night of the year there are a number of fixed and scheduled handovers happening in different geographical areas within the

physical confines of this intensive care unit around 8am and 8pm. In this chapter how handover is practised in each of these is explored. Given the importance of the spaces of handover arising from the data analysis, a physical and geographical introduction to the ICU might be helpful. By walking (virtually) through the entrance doors (on the floor plan) we see the relatives and visitors seating area reception (Image 4.1). Walking on turning to the left we see a ward with six single rooms (Image 4.2) and to the right the main ward (Image 4.3).



Image 4.1 Reception



Image 4.2 Turning left into ICU



Image 4.3 Turning right into ICU

The relationship of the different places where handover occurs is described in the following text which is illuminated by a line drawn plan of the ward. This is a photograph of a document which was used during the construction of the unit in 1988 (Figure 4.1). As described above, the working day in intensive care starts with handover and ends (continues?) with handover. From the analysis, it is clear that each staff group engage in handovers to similar staff. All of the patients are handed over twice by the nurse in charge who is going off duty. All of the incoming nursing and ancillary staff gather in the coffee room and have a synoptic (around ten minute) handover of all (up to sixteen) patients from the nurse in charge. The charge nurse will allocate staff to individual patients during this meeting. Many of the staff will arrive early and there is the opportunity for socialising before the formal nursing report is given. Following report, there is then a one-to-one meeting of the outgoing nurse in charge and the incoming. This happens geographically in the charge nurses' office (Sisters' room on the plan). At the same time each of the nurses coming on duty move to the bed side and their colleagues responsible for individual patients hand them over there (BS on Figure 4.1). The doctors who have been on duty for a twelve hour shift meet with the incoming staff in the "doctors' room" (Doctors' room on Figure 4.1) and for 30-40 minutes another verbal handover is enacted.

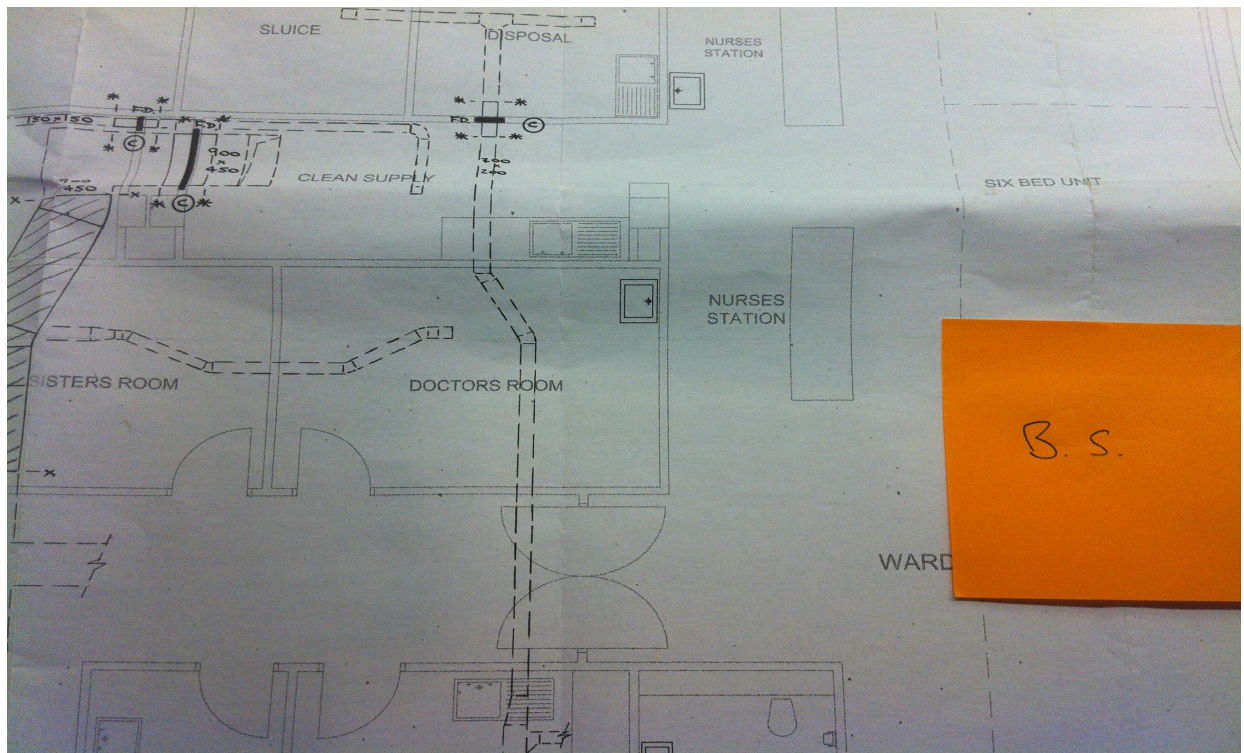


Figure 4.1 Plan showing where handover happens

A number of materials and artefacts are to be found in each of the handovers. Some of these are shared across the spaces and handovers, but some are unique to a particular professional group. How these are gathered and assembled and their intra-actions and use in handover will be explored. The work the clinical handover sheet does is brought to the fore. When the handover includes all of the patients in the unit (i.e. the charge nurse or the medical handover), it is standard practice for the nurses and doctors to utilise a print-out of patient information from the computerised Wardwatcher clinical audit system as an aide memoire (Image 4.4) and to make notes on. This is the Wardwatcher Handover Report (Image 4.4) and *scribblings* on the back (Image 4.5).

Date: 11/12/2013 ICU		Handover Report Page	
Bed 1: [redacted] (Dr CP Derry)	Age: [redacted]	Day 32	
Diagnoses: low GCS, tonic-clonic seizures (no previous fits) - status epilepticus - AKI from ACEI. Hstatus hernia, upper GI bleed 31/10.	RS: CVS: Renal: GI: Pain/neuro:	Wound/drain: Microbiology: Family: Status: Plan: ? family in	Wound/drain: Cef- → family Microbiology: W/D 12/12 Family: ? NBD Status: ? family in Plan: ? family in
Bed 2: [redacted] (Mr RG Wilson)	Age: [redacted]	Day 23	
Diagnoses: Elective anterior resection (colon Ca), 15L bleed, no anastomosis, return to theatre, packing removed, colostomy, further bleed post closing, vein ligated, total colectomy (ischemic) TSMV clipped. Infected ascites: washout (latest 5/12). Recent PE: heparin.	RS: CVS: Renal: GI: Pain/neuro:	Wound/drain: Microbiology: Family: Status: Plan: Trachea tube []	Wound/drain: [redacted] Microbiology: Ascaris found → Family: [redacted] Status: Trachea tube [] Plan: Trachea tube []
Bed 3: [redacted] (Ms L Myles)	Age: [redacted]	Day 7	
Diagnoses: R MCA aneurysm: SAH with SDH, 4mm midline shift, early uncal herniation. 06/12 Colling of R MCA and craniectomy with removal of SDH. PMH: bipolar	RS: CVS: Renal: GI: Pain/neuro:	Wound/drain: Microbiology: Family: Status: Plan:	Wound/drain: [redacted] Microbiology: Haemophilus inf. H. influenzae Family: [redacted] Status: [redacted] Plan: [redacted]
Bed 4: [redacted] (Mr G Smith)	Age: [redacted]	Day 20	
Diagnoses: elective CT drainage R diverticular abscess (ix chronic abdo pain), small pneumothorax during the procedure, hafia on culture (completed mero). I&V for presumed chest sepsis.	RS: CVS: Renal: GI: Pain/neuro:	Wound/drain: Microbiology: Family: Status: Plan:	Wound/drain: [redacted] Microbiology: [redacted] Family: [redacted] Status: [redacted] Plan: [redacted]
Bed 5: [redacted] (Mr J Kandasamy)	Age: [redacted]	Day 7	
Diagnoses: SAH early to moderate hydrocephalus on initial CT. Hypoxaemia requiring intubation for neurogenic pulmonary oedema, cardiac index 1.7 l/min/m2, widespread T wave inversion on ECG. pneumonia	RS: CVS: Renal: GI: Pain/neuro:	Wound/drain: Microbiology: Family: Status: Plan:	Wound/drain: [redacted] Microbiology: [redacted] Family: [redacted] Status: [redacted] Plan: [redacted]
Bed 6: [redacted] (Mr PFX Statham)	Age: [redacted]	Day 2	
Diagnoses: transfer from [redacted] with SAH, for coiling +/- VAD GCS 12 prior to transfer VAD in	RS: CVS: Renal: GI: Pain/neuro:	Wound/drain: Microbiology: Family: Status: Plan:	Wound/drain: [redacted] Microbiology: [redacted] Family: [redacted] Status: [redacted] Plan: [redacted]

Image 4.4 Wardwatcher handover report sheet

Wardwatcher → plane →
Scan → VAD → 20.

USS report
Gastric - GB
Wall slightly thickened
0.6cm fluid/biliary
Wb, kidney, adrenal, pancreas
Spleen (N), no AF noted

Wardwatcher → plane →
Scan → VAD → 20.

Wardwatcher → plane →
Scan → VAD → 20.

Image 4.5 Scribbles on the back of handover sheet

The Wardwatcher computer system is installed in almost all of the intensive care units in Scotland and the data which is collected through it informs the production of both a national annual report and a local, unit specific annual report. However, one of its other functions is to allow production of an individual unit handover document which is printed as handover sheets. To the staff using

the system this may well be the key function it performs for them. These sheets contain demographic information on all of the patients in the ward with a free text section available to allow inputting of information, including documentation of the patient's diagnosis and the circumstances of their admission. Some of this information is pre-printed on the Wardwatcher handover sheets, but as the participants in handover first make their own notes on these sheets and then take the sheets with them as they go to review patients, attend ward rounds and ultimately engage in the next handover, these become personal, floating and changeable texts.

There are therefore multiple places where handover happens and a number of artefacts which enact the practice. We will now move around the spaces, hear what is being said and tell how handover is being done in practice.



Image 4.6 Charge Nurses' Office

Handover of the ICU from nurse in charge to nurse in charge

The outgoing and incoming nurses in charge sit down together and talk through all of the patients in the ward. As their responsibilities include the staffing of the unit (nursing and healthcare support workers), thus ensuring that there is a safe skill mix and appropriate nurse to patient allocation, a major emphasis of their handover is management of these resources. They have a plethora of other responsibilities about the *stuff* of intensive care, including drugs, refuse, equipment. I will return to this point later. Their room sits on the corridor at the entrance to the unit. It is an ordinary office with desks, filing cabinets, computers, ring binders, telephones, wall planners evident. The door is closed and often locked during handover minimising interruptions. There are no windows apart from that in the door and the blind over this is pulled down, shut. The keypad on the door waits in readiness to allow the initiates of the pass code to enter. The charge nurses are seated at the desk within, wearing the standard uniforms which identify their grade and position. They are holding their nursing handover sheets (Figure 4.2). as well as Wardwatcher sheets and handover starts at 8am.

Daily information sheet Ward 20 ICU

Date	NIC Day		NIC Night	Consultants	D	N	
	Day	Night	Outstanding bank OT	Staffing issues	RIE 118	SJH	
20 staffing					staff	staff	
Level 3					Level 3	Level 3	
Level2					Level2	Level2	
58 staffing					staff required	staff required	
Level 2							
	Exp in	Ward fit					
				Safety Brief			
Discharges					Captains log. Any important issues not otherwise recorded		
Name	Ward	Consultant accepted	Bed manager aware	Time referred			Time bed avail
Signatures	NIC Day		NIC Night				

Find under shared area WGH apps 2 / ICU / Nursing/ Documents and Stickers

Figure 4.2 Nurse in charge handover and safety document

Handover between Charge Nurses

Jane "Em have you looked at the off duty?"

Heather "No not yet"

Jane "You've got thirteen plus one"

Heather "OK"

Jane "Em and you've got six Level threes and five level twos. Em moved a couple of folk about last night but they should have been updated on Wardwatcher"

Heather "OK, yeah"

Jane "I'll do all the housekeepery stuff later on"

Heather "Yep"

Jane "Ok bed 2 Ron Charles 19 hit by a taxi, parietal skull fracture, em extradural, subdurals, subarachnoid"

Heather "Yeah"

Jane "He's not perfect after that if you know what I mean..... BMs are on the increase but he is not on insulin yet being a Level 2"

Heather "Yeah"

Jane "You know him don't ye? He is on SIMV 30% (oxygen). Sorry he's just been changed to pressure support 10 over 5. Still on 30, em his sats were grand, MP3 coming up off his chest. Air entry is good as well. His

intercostal drain is static and not draining so I don't know if they would consider taking it out today?"

Heather "When did he have that done?"

Jane "Em just two or three days ago I think it was replaced cause he had two. They took the right one out and it had reaccumulated but they didn't reinsert it"

Heather "Which side is that one on, the left?"

Jane "That's on the left, yeah the one that's remaining. Em his heart rate's gone up to 155 at the highest overnight. It's just we did an ECG and its sinus tachy. Em don't know if it's related to pain or anything, he's written up for codeine, em but his temperature is up as well at 38.5 em and he hasn't been recultured. He is peeing well, he's in a negative (fluid) balance. Em bowels are moving. Elaine (nurse) seemed to think it's overflow but we have taken a sample off anyway just to check that out for Clostridium difficile: C diff). His feed is down to 50 for after a large aspirate and his maxolon (encourages gastric emptying) has been restarted. Midazolam (sedative) is off now, alfentanil (morphine like pain killer) is down at 2 (mls per hour infusion) coz the plan was to try and sort of wake him up a bit and assess how he's doing. Em he has not had any further treatments (for elevated intracranial pressure) since Saturday, that's still grand. Em he seems to be obeying commands with the right side and his pupils are a six (mm in diameter). Em he is 2T2. He has got a bit of a sticky left eye and that's been swabbed"

Heather “OK”

Jane “His mum has been here but his dad is on his way back from Bolton today so I don’t know if the docs are meaning to speak to them both together and just put them in the picture and give them a bit of an update”

Heather “Yep”

This transcription allows us to identify different aspects of the practice of charge nurse handover. The handover starts with a discussion around nurse staffing of the unit, the practice of which will be explored in detail later in this chapter.

There is then a move to discuss all of the patients individually and critical illness can be seen to be enacted through an assemblage of heterogeneous elements.

In the case above, the mode of injury is described and immediately followed by a description of the head injuries sustained as discovered through computed tomographic (CT) x-ray scanning of the head which shows “parietal skull fracture, extradurals, subdurals, (blood clots) and subarachnoid (blood)”. The organ systems and aligned support are detailed and linked to body function and monitored physiology, working methodically through the systems: respiratory, cardiovascular, renal, gastro-intestinal, neurological. The actions of hardware such as the intercostal drain (chest tube) are included – “static and not swinging” - and this will inform the decision as to whether it is still required and could be removed. But who are the decision makers? And where are they?

They are the doctors and in this case the consultants on duty. But their handover will happen nearly an hour after this handover and in a different closed room in the ICU. More about *they* and *them* in the next chapter.

In another handover (in the same space on a different day) the charge nurses reveal more locally situated materialities of practicalities and events.

Gavin "We need some oral and iv clonidine for this morning. Norma wrote the indent so if someone could take that down that would be grand"?

Heather sneezes "Excuse me"

Gavin "Irene (nurse) was off sick but she's resumed for this morning and I've ticked on the off duty people who were sick who haven't resumed yet"

Heather "Brilliant"

Gavin "The only one who is really an issue is Gordon's night shift tonight, so we can just, hopefully he'll phone in. He may already have phoned in. And can you get some orange bags, we used the last of them this morning?"

Heather "Orange bags? That's an unusual thing to run out of isn't it?"

Sound of paper rustling in the background"

Gavin "ah know, ah know. There's a cd.... I wasn't sure if there was a cd (controlled drugs: narcotics) order in today it being a Bank Holiday but there's nothing we are drastically short of, everything's pretty grand. I presume we weren't allowed to send one not unless it was an emergency order? There's nothing there that we're crying out for"

Heather "I can imagine"

Gavin "That's pretty much it. Yawns. When were you last on?"

Heather "Saturday night" (rueful laugh)

Gavin "So you know most of them?"

Heather "That's why I'm like a zombie this morning yeah mm mm. Yeah I do, I know them"

Sound of door opening

Gavin "Oh hello"

Heather "Yes we're in here"

Door closes

Gavin "Mabel Straiton's in bed 1. She's the 62 year old lady who had the grade 5 subarach which was coiled eh she didn't have a great night to be honest around about 11 o'clock or so she didn't blow her pupils but her pupils were 3 and reacting and they went to a size 5 and non-reacting"

Heather "OK"

Gavin audibly takes a big breath in and starts "On to bed four is Barbara Flynn....."

In the same way as in the previous charge nurse to charge nurse handover the initial priority is staffing. Once the message about a deficiency in clonidine, a powerful sedative drug, has been conveyed the focus is on staffing. And again the term used is *off duty*. The roster created and used for nurse staffing in the ICU is located in a ring binder, the *off duty folder*. Parts of the document are pre-printed, but much of the detail is hand written (in pencil and impermanent in case it needs to be changed). Although it resides in a slot at the nurses' station in the main ward, at times such as that described in this handover it will be brought into the charge nurse office and used to inform discussions on staffing the unit. In contrast, the doctors' roster is known as *on call* and is created electronically and published in this format as well as being printed off and hung on the wall in both the doctors' room and in the ICU office. It is also sent to the

hospital switchboard so that they know whom to contact in an emergency. The professions have developed such different approaches to their work time, the nurses referring to their time *off* and the doctors to their time *on*. Traditionally nurses have worked shifts whereas doctors would have daytime work and then (whether in general practice or in hospital medicine) a small proportion of the total medical staffing would be available for emergency work or to troubleshoot problems. Now it is only the consultants who work this *on call*.

At the end of their handover Gavin sighs and sounds as if he is bracing himself. He has just talked about the person Mabel Straiton and the fact that her pupils have dilated and are now unreactive. He knows that this signifies that she will almost certainly die. But as can be seen from the transcripts of these handovers of all of the patients in intensive care the nurses and doctors push their talk through these difficult situations and then have to progress to the next patient as “ On to bed four.

Death appears in another charge nurse handover

Jane “Eventually yeah. He is on his cipro (antibiotic) and that’s him really. You know Mrs Henderson (patient) passed away yesterday?”

Heather “Yeah. There are some belongings there. Is somebody going to pick them up?”

Jane “Oh I don’t know. Don’t know, I’m sorry. Margaret Ross in 9. Em do you know her as well”

Heather “Yep”

They move from patient to patient incorporating a brief discussion on the recently deceased. The person is delimited to a bag of clothes and toiletries. Stuff is being handed over about stuff which needs to be handed back to the family. There is a matter of fact conversation about the practicalities of the situation. In addition to belongings the charge nurses have responsibility for other items which the family need to help them with what to do after a death. In most cases the death certificate is given to the family immediately after the patient has died (often by the doctor who has completed it) but in some instances the family return the following day to receive it from the charge nurses. So this is a practice which is shared across the professional groups and supported by the individual handovers.

Handovers in the doctors' room

In the doctors' room, there is a wallmounted white board which is a focus during handover. Most of the staff sit facing the board and different elements on it are highlighted and discussed and tasks allocated. It reveals patients' names, bed allocation and named referring consultant. There is also space for *safety issues* and the details of patients expected for admission or who are in a ward in the hospital - the so-called *outliers* - and need a review by the ICU team, and for jobs which need to be completed.



Image 4.7 The doctors' room, handover sheet at the centre

In the course of the day there are two different yet scheduled sit down handovers in the doctors' room. At 08.30am, the night team (one or two trainee doctors and possibly a consultant) hand over to the day team of up to five trainees and two consultants. On Monday morning this means that none of the day staff coming on have been in the unit for several days and all of the weekend staff are leaving for days off. This has major implications for continuity of care. The charge nurses and the consultants hand over the whole ICU and all of the patients from individual to individual. The trainee doctors may be involved in a handover with multiple others or they may also handover all of the patients, one to one, as is the case in this handover.

The doctors sit and talk through all of the patients in the unit, expected admissions, and patients recently discharged.

Evening handover trainee doctor to doctor

20.30 ICU handover

Jackie "Em...I couldn't get that to print. (Wardwatcher handover sheets)

Em the man in bed 2 has gone to the ward absolutely fine. Mr J from bed 3 has gone round to HDU and is absolutely fine"

"Mrs J has been essentially the same today. There's really not that much change from her at all, she's still basically top line GCS (conscious level) but just em really weak can't do, can't really do, anything at all. The only change we really made on the ward round was we reduced her dexamethasone from 2 bd to 2mg once a day. She's on pressure support FiO₂ is 0.4 ABGs are good and other systems are stable and here em I don't think"

knock at door.. "come in, it's open"

door squeaks open

Nurse Bryony "Could I get more morphine written up for Mr Robson?"

Jackie "yep"

Nurse Bryony "Is it ok to get it prescribed 'as required'?"

Jackie "Yeah give it just as he kind off needs it"

Pause of 15 seconds (as drug is prescribed: my note)

Jackie "How are you giving it? IV?"

Bryony "yes"

Jackie "and he's twenty something?" (age)

Bryony "That's right"

Jackie “That’s fine (door squeaks and closes). Em what was I talking about?...”

The trainee doctors are involved in their detailed handover. In this case they have not been able to print out an up to date Handover Report so they will be relying on the whiteboard and the outgoing doctor has her sheet from that morning’s handover. They are interrupted by a nurse because, out in the ward a young man is in pain and she is seeking analgesia for him. Negotiation and questions and answers follow with his pain being enacted by the participants, the drug kardex, the setting of handover and his age. The drug prescription chart is another floating text in this respect actually being moved around the unit physically. This is also a demonstration that handover is not a bounded practice. More on that later. Back to the handover.

Jackie “her sister was really upset today and she was just spoken to mostly by the nursing staff. I just think she’s just upset she’s just not really getting better and she’s worried because she just thinks that it must be terrifying to be lying there just essentially you know awake and paralysed... I think Dr G tried to reassure her yesterday but she was just ...upset, I don’t think her family will be in overnight so I don’t think that it will be an issue but...I don’t know they might ‘phone (Sounds fed up but her voice brightens moving to next patient: from my notes on the transcription)

A point about the words being used. *Paralysed*. This woman is unable to move because her muscles do not work because of critical illness poly-myoneuropathy. This is a reversible disorder associated with sepsis, and multiple

organ failure. What would the patient and relatives think if confronted with this word? Permanent severe disability?

In the same way as in the charge nurse handover there is a need for the doctors to work their way through all of the patients in the unit and in a similar way to Gavin in the previous section Jackie *moves on* to talk about the next patient. So in amongst the talk about diagnoses and technicalities there are similar emotions which are manifest in the different professional handovers in the separated spaces.

The trainee doctors are handing over the family and their concerns. They are also pre-empting issues which might arise overnight. These relatively inexperienced clinicians have come on their clinical rotation (around the Deanery to different specialist units), to the complex environment of intensive care, and are now dealing with the issues of death and dying, withdrawal of support and the interactions with the family required in these. The move from one patient to another in handover allows a palpable (when listening) lightening in mood very similar to that in the charge nurse handover.

Jackie goes on:

"Mrs D, remember the whole story yesterday about this mitral valve thrombus so she got a trans-thoracic and a trans-oesophageal echo today and a bit disappointingly I suppose it showed the thrombosed leaflet is exactly the same. Em I had just a really quick chat with her husband at the bedside and he was really upset though I think they've been really upset the whole time, I mean she has always been really poor since 2006"

Susan "Practically housebound!" ("sounds exasperated" from my notes on the transcription)

Jackie "Housebound and in a wheel chair..yeah but they are eh just really distraught about the whole thing and obviously they're a really close family. Em I don't think, same again, I don't think they'll be in overnight, I don't think they'll phone but em I think they're going to get spoken to by one of the consultants tomorrow because I don't know what the plan is...there is essentially no plan"

Susan "Would they replace that valve? She wouldn't survive it....."

Jackie "She's totally unfit for surgery. I don't know whether she's totally unfit for surgery because, it's probably a combination of her normal poor functional status, the fact that the posterior part of her LV is akinetic on the echo and that she is so bad now like she is so unwell I just don't think...I mean the cardiologist Dr N said surgery is not an option here but I think he discussed with the cardiac surgeons anyway and they agreed that surgery is not an option and her family seem to be aware of that. Em as far as I know there is no plan for, there is no management plan for after the thrombolysis"

The patient is enacted through the assemblage of the echocardiogram (ultrasound heart scan) which shows a pretty hopeless situation, through her poor chronic health, through her family and, at the centre of this, there is apparently total uncertainty "there is no plan, there is no management plan". They surface their lack of understanding of the uncertainty which exists in the management of patients with complex problems. They do not participate in the

consultant to consultant handovers which usually take place as a walk round the unit so are not party to those discussions.

These relatively inexperienced trainee doctors are *talking what they don't know* about high stakes medicine. This is not appendicitis. Once that diagnosis is made the appendix is removed and it's all sorted. Unlike that situation this is a complex cardiac problem which has been discussed by numerous specialists and the outcome is that there is no definitive treatment. So the certainty is that the patient won't survive, surgery is not an option and now the transition from active treatment to symptom relief and palliative care needs to be negotiated. Jackie continues:

“and I think the thought is that we're gonna withdraw on Friday if there has been no improvement. That HAS NOT BEEN BROACHED WITH THE FAMILY who I think will be not enamoured with that decision” (slight nervous laugh).

They then move on to the issue of withdrawal of support and treatment. Jackie raises her voice almost to a shout as she states this, and then laughs. It is only in the doctor to doctor handovers that these extremes of emotion appear. Could this be age and life experience related or is to do with the different professions? Certainly the patients and families are brought into being in colourful terms here. The upper case indicates that Jackie is virtually shouting in the recording and they then both agree that the family are not likely to be ready for these decisions. In contrast to the charge nurse discussions on family which are about the mechanics of getting the family and medical staff together to speak, this conversation is focussed on the practice of talking with the family and of taking them through the arduous and sinuous path of withdrawal. However

these separate handovers could help to patch together the communication with the family and enact the care that they receive but how are they joined up?

And then another vital function of handover is realised:

Susan "It was broached with the family last weekend"

Jackie "Yeah before the mitral valve problem was found. They were dead against it and I think they'll still be dead against it but, yeah, mmm"

Here we see calibration and the correction of inaccuracies. Susan brings her prior knowledge to the discussion and then Jackie reveals that what she had almost shouted is not only wrong but that she knew it was not correct. Through the intra-action of handover the information about the patient is discussed, verified, agreed.

Jackie "So (sighs) things are looking a bit grim for her really although in her own way otherwise she is stable, well she is quite stable apart from her 25 ml an hour of noradrenaline (echoed by Susan). Oh the other thing about her, just realised I've written it down here, you probably know this she has these frequent runs of VT (malignant cardiac rhythm) self-terminating like 3 or 4 beats"

Despite the desperate nature of the prior conversation Jackie now says she is *stable* despite being on a fair dose of noradrenaline to keep her blood pressure up. She is then reminded of another problem by her own writings on the handovers sheets emphasising their place in the practice of handover.



Image 4.8 The doctors' room. The charge nurse office is on the other side of this wall.

Another trainee doctor starts handover

"The man from bed two has gone, Mr J from bed three has gone". The doctors are looking at their handover sheets and at the white board (Image 4.8) with the patients arranged on it in their bed spaces. The seated ward round starts (virtually) at the first bed and works round the unit. Similarly the charge nurses handover starts: "Bed two, Ron Charles and Mabel Straiton's in bed one". At least this element in the practice of handover is seen from these transcripts to be tied together *through the wall* between the rooms the charge nurses and doctors occupy for handover which are next door to each other. This talk through the beds, with patients attached, is shared practice engaged in by both groups and could be part of the patching together of the multiple ontologies of handover which we see emerging from these transcripts. Although the

handovers are happening in different spaces not all of the practices and discourses are completely different. From the transcripts it is clear that this ascription of bed number to patient is a part of everyday clinical practice during handovers across all groups of staff. Labelling by bed number also has safety implications as patients are constantly being moved around the unit from bed space to bed space depending on clinical need and clinical condition.

Morning handover in the doctors' room

It's 8.30 am. The doctor on overnight is getting ready to handover to the day team. He will have had a walk round the ward and assessed each patient, taking notes in the same way as the Charge Nurses do using the Wardwatcher handover sheet. There are two consultants and three trainee doctors spread around the room. Coffee and tea have been made and fresh handover sheets printed for all. They work through the patients using Wardwatcher and they all face the wall board but prioritise the unstable patients and discuss them first.



Image 4. 9 Doctors' room, scans, cakes and beverages

Artefacts of handover: computers, CT images (Image 4.9), on call rotas, telephone lists, telephones, coffee and cake, handover print outs.

The doctors come together for the handover closing the door of the room to exclude those outside and to acquire confidentiality. The computers and screens give access to the patient's history, clinic letters, drugs as well as blood results and CT images and other imaging (x-rays). Those assembled are present *on duty* enacted by the on call and shift rotas which hang on the wall above the computers, and which have been sent electronically to switchboard and others so that the absent presences who are the staff around the hospital can access intensive care for that other group of absent presences, the patients. Telephone lists and telephones allow engagement between the staff. The Handover Report sheets have already demonstrated their place in practice within the transcripts previously analysed. But what of coffee and cake? In the doctors' handover there is a palpable social element which is less obvious in the other handovers.

Steven (consultant) "Do we have a handover sheet?"

James (consultant) "Yes, they're here"

Steven "Cool, right"

James "Right, we've got just over 15 minutes"

Steven "But 5 is fine" (laughter).....

James "Exactly" (said emphatically)

Yet again the place of this sheet in the practice and shaping of handover is emphasised. The handover is enacted by this.

Ben (trainee) "Busy night, 2 admissions and eh, 3 people really playing up. Em the main, I'll go over the kind of the ones that need sorting out first of all. Em the first gentleman is Mr Hart. He is a gentleman that allegedly ran out in front of a car with the intention to kill himself. Em he has a kind of history of alcohol kind of misuse, however he was taking risperidone apparently at the same time he tried to kill himself but he didn't have any mental health issues in the background"

Steven "We're not, yeah, I mean the Royal Hospital (Psychiatric) have never heard of him, the GP says he is not on risperidone, so we think this is all rubbish"

James "Fine"

Steven "But methadone and alcohol and inappropriate behaviour are true. No psychiatric history to date". Door opens and closes as Emily, trainee doctor, joins handover

Ben prioritises what he sees as the important problems. Rather than working through the patients from bed 1 to bed 16 he homes in on those who need *sorting out*. In contrast in the charge nurse handovers this initial prioritisation is not about individual patients but it is around providing adequate staffing for the unit. Although these practices happen separately, and do not come together physically so are not shared between the isolated handovers, they both impact on the safety of the patients and of the staff and of the unit. The enactants are

unaware of what is happening, being said and being decided in the other handovers. When the doors of the separated rooms open and the participants of the various handovers meet, like the ripples generated from multiple pebbles dropped in a loch, there is interference. We shall return to that later.

Back to the handover. The patient's past history is reviewed. Ben has been tentative about the patient's suicidal intent, and then the multiple absent presences involved are identified. There are specialists in the hospital who are looking after him; the GP who provides lots of useful information and the psychiatric specialists who have no knowledge of him. Steven has identified the myth which needs to be dispelled and does so.

Ben "Certainly his main problem overnight was his increasing eh"

Steven (interrupting) "So just go back: isolated traumatic brain injury"

Ben "Em he was eh essentially em brought in, em had a subarachnoid bleed, pneumocephalus. Em seen by the neurosurgeons. He had a kind of a very kind of odd looking em ICP kind of monitor put in which is on a kind of..."

Steven (interrupting) "Rehau" (a specific make of pressure monitor)

James "Fine"

Ben "Em he had over the last 2 days, he had problems with raised intracranial pressure needing 8 treatments"

Steven "You've missed a bit (interrupting). He had quite a significant extra and subdural haematoma that was decompressed, taken out and a

craniotomy put back on but Neurosurgeon Cons didn't want to do anything more extensive cause the fractures in his head extend to involve the superior sagittal sinus and so further decompressions for ICP problems were not a surgical option"

Ben "I have to say I didn't speak to Max (consultant on overnight) about that"

James "Right"

Steven "Medical management only?"

James "Yeah"

The trainee is trying to present the patient for handover and is constantly interrupted and corrected by the consultant. Not only this but on each occasion uncertainty and doubt are cast aside by the infusion of expert opinion. This set up of handover is unique in the study. In charge nurse to charge nurse, trainee doctor to trainee doctor and bed space nurse to bed space nurse handovers there is much less difference in the individual participants level of experience and expertise. In this current handover we have a novice of intensive care handing over to a group of colleagues including two consultants who are experts in intensive care. Once again a trainee is talking what he doesn't know.

Emily" Is this patient Mr Hart?"

James "Yeah"

Emily “I’ve just been asked to see him now because the nurses are up in arms because his ICP (intra-cranial pressure) is going through the roof currently”

James “Right”

Emily “Em it’s up to 30, and they wanted to know whether to give him another treatment now or what’s the decision?”

Steven “When was his last one?”

Emily “ 2 at 3 and 4 o’clock”

Ben “About half an hour ago we gave him another eh hypertonic saline em”

Steven “30 minutes ago? and has it come down at all during that time?”

Emily “Em it came down briefly and then its just gone back up.... so they’re wondering what the Hell is going on?”

Steven “Ok lets cut this and speed this up a bit. Em so he had loads of treatments, and he was Eurothermed, and on Monday he had 2 treatments, he got cooled down to 33 and everything was cool”

Steven “Yeah”

This time no bed number is mentioned to start off the handover, but the patient’s name and description as a *gentleman*. However, there are plenty of numbers around in this handover: intracranial pressure, times and timings, doses of drugs, body temperature. The patient Ben is describing has

lifethreatening trauma mainly involving his skull and brain but also has a broken wrist. The staff involved in the handover have different fragmentary knowledges of the patient. Unlike the charge nurses who have enacted the unit through staffing and categorisation of dependency, the medical relational web involves for each individual patient a group of experts with specialist investigation and management. In this particular case, some are in the same hospital (Neurosurgeons and Neuroradiologists), some in another hospital (*orthopods* i.e. Orthopaedic surgeons) and the network also includes the general practitioner with positive information and the psychiatrists who, it transpires, have never heard of the patient. The patient's critical illness is enacted in different ways by each group. The surgeons by deciding an operation will not help and could be damaging. The radiologists by their interpretation of the CT images. There are staff who are in practical terms present and looking after the patient. Others, such as the general practitioner or psychiatrist, are summoned electronically or by telephone to contribute to this care. These absent presences may have a profound influence on things and can provide a calibration of *the facts* thereby improving the reliability of handover and reducing the influence of hearsay and myth creation. The nurses are involved in the doctors' handover through the medium of interruption which allows the doctors to discover that the nurses are affected by, and focussing on, the intracranial pressure which is not behaving. The doctors in handover are trying to create a coherent picture from all of these fragments, pieces of the jigsaw, being held by different people in different worlds. On the basis of the specialist imaging and surgical findings further surgical intervention is ruled out and the patient was deemed for medical management *only* i.e. not for an operation.

Mol has described the situation where the *distribution* of disease (atherosclerosis) over a number of domains can be described: the clinical “itinerary”; treatment; advanced disease “poor (at) present(ation)” (my bracketed words) or “gradual process deterioration”; and “conditions of possibility” where the first three may change with the development and introduction of new therapies (Mol, 2002, p.7) . Similarly to her subject area, atherosclerosis, intervention for traumatic brain injury can be surgical or non-surgical. However, the application of the term medical management *only* is performed into existence by the Neurosurgeons and the intensivists accept this. The surgeons make a decision not to operate but the intensive care medical and nursing staff must then enact the management of the patient through all of their clinical interventions and practices.

To enable you to appreciate the critical nature of this patient’s condition, and the intra-action of this by monitors and protocols, some of the clinical materialities of traumatic brain injury are expanded on here. The patient is at great risk from the elevated pressure within the skull, the raised intracranial pressure (ICP). The deviant pressure is measured by a monitor placed on the surface of the brain through a burr hole drilled through the bone of the skull. The measurement and display of this pressure drives the management which is based on the unit TBI (traumatic brain injury) protocol, traumatic brain injury being enacted by the protocol, The reified place that this single measurement has achieved within the staff group is exemplified by the comment “the nurses are up in arms because his ICP is going through the roof currently”. The TBI protocol states that the patient should be sedated and muscle relaxed with several drug infusions, blood pressure is continuously monitored via an intra-

arterial catheter and maintained with intravenous fluids and noradrenaline (vasoconstrictor which increases blood pressure). Oxygen and carbon dioxide levels in the blood are measured often in the anticoagulated blood samples taken from the patient's arterial line and transported across the unit to the blood gas machine. These gases are tightly controlled by ventilation. All of these interventions require minute to minute adjustments, and attention to ever changing detail, which you could call informed fiddling or tinkering. The patient is positioned in the bed at a 20 to 30 degrees head up angle to allow free blood flow from the skull back to the heart. Blood glucose is controlled with an insulin infusion; body temperature is kept normal by cooling. And this is medical management *only*?

Emily says *they* (the nurses on this occasion) are "*wondering what the Hell is going on*". This handover is demonstrating different framings of the patient between the doctors, the bed space nurse, the nurse in charge and probably the runners. There is a lack of coherence of understanding of the application of management utilising the generic traumatic brain injury guideline and providing individualised care. The medical staff have ultimate responsibility for the overall decision making but it is not clear how this is shared, communicated and understood. Getting back to physiology and temperature this patient has been randomised to the Eurotherm 3235 multicentre international trial of hypothermia in TBI hence the term *Eurothermed*, enactment by dint of randomisation to the treatment arm of the study protocol. And he is receiving *treatments*. These are osmotic therapies which suck fluid from the brain tissue and reduce ICP but also have adverse effects. And there are yet other major interventions in the *medical* armoury. This is less medical therapy *only* than intensive care nearing

the pinnacle of its most interventive. This single critical illness, traumatic brain injury, in this one patient, has multiple ontologies amongst the participants in the patient's management, although all might agree that they have a common hope, a good outcome for the patient.

Evening handover between trainee doctors

Jackie “ Em I don’t know em you know, he sort, you know he’s been a wee bit better. Well there’s not been any issues. The microbiologist phones, I took some cultures from him, it must have been before I went home yesterday ‘cause he had a wee pyrexia, they phoned to say he had gram negative bacilli in his blood cultures”

Susan “Oooh”

Jackie “ and he is started on whatever I’ve got written on my leg here, Meropenem, and em I think it’s probably significant in that it’s not a contaminant but I mean it’s probably contributing to his confusion but I’m not sure if it explains about his seizure. He’s a bit old for a febrile convulsion” (laughs)

Jackie has been called by the microbiologist in the laboratory to let her know the result of a blood culture which has grown gram negative bacteria. Like all of the other trainees (and the bed space nurses and some of the consultants) she wears surgical scrubs (*blues*). Information and messages are commonly written onto the trousers of these. The crucial information which is to start a powerful, broad spectrum antibiotic is transferred through handover from this floating text on her trousers. At the end of the shift Jackie will change back into her normal clothes and consign her scrubs to the linen basket from which they will be transported to the laundry for washing, erasing that text at the same time.

Death arising in handover

Around one quarter of patients admitted to this intensive care unit will die there.

So how is that enacted through the discourse of handover? As can be seen from the data presented diseases are done differently by different groups of staff. When doctors and nurses talk of diseases whatever they say is *talk* and is affected by the person who is talking. But in intensive care we are doing critical illness and handover includes death.

Two junior trainee doctors and a registrar, a small knot, a tight cluster of people, these practitioners of handover. Sayeed is handing over to the others. They are working their way through the patients using the board and the handover sheets. Having started at bed one they are just completing their discussion about the patient in bed four.

Sayeed "Yes that is what I am saying he could potentially (be extubated: my comment) but we'll see how things go..."

Joan "Yeah ok"

Sayeed "The eh there is Jennifer"

Neil "Yes what happened to Jennifer?" (patient in bed 5)

Sayeed "Withdraw. And she died instantly. Well within half an hour of withdrawing. So..."

Joan "And has the paperwork and stuff been done?"

Sayeed "I think that has been, well, not been that's been sorted by Julian

(consultant) and everything”

Joan (interrupting) “The death certificate and stuff ‘cause you’re not here tomorrow?”

Sayeed “Death certificate has been done, I think, even the...”

Joan “Crem form?” (the legal form which needs to be completed by two doctors in order to permit cremation to be performed)

Sayeed “I don’t know about the crem form I think is not done. Procurator Fiscal not informed (sounds of shuffling paper), PM (post mortem) not requested, relatives have been informed but Death Certificate has been done by Kenny”

Neil “grand”

Joan “ok”

Discussion in background between Neil and Joan about family coming back next day and need for cremation form to be completed

Joan “Yep, ok that’s fine”

Sayeed “So eh that’s her”

The death checklist (Figure 4.3) is worked through and the tasks of communication and *paperwork* are completed. The whiteboard is used to highlight those tasks still undone. In the case illustrated here (Image 4.10) the general practitioner and procurator fiscal need to be phoned and the death certificate written (if the Procurator Fiscal permits it).

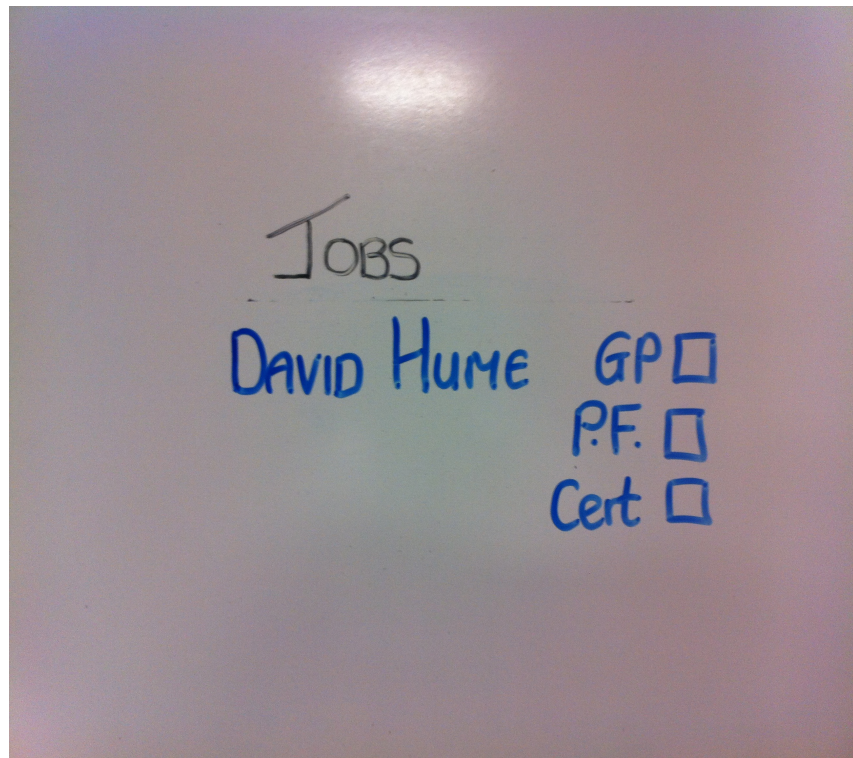


Image 4.10 Doing death through the white board

CRITICAL CARE DEPARTMENT: DEATHS IN WARD 20: CHECKLIST AND GUIDELINES

Patient's name: _____

Date of death: _____

Time of death: _____

1. Inform family	Date	Signed
2. Inform referring consultant by next working day or sooner		
3. Inform GP by next working day or sooner		
4. Is this patient a potential Tissue Donor (<60 years for heart valve – no age limit for corneas, no malignancy, no +ve virology, no systemic infection). Refer if in doubt. If YES refer to the tissue services co-ordinator: 536 5751 If not a potential donor then why not?	YES / NO	
5. Inform Procurator Fiscal as appropriate. See over for indications. If PF contacted you must not issue a death certificate unless the Fiscal authorises you to do so. They will issue and deliver the certificate direct to the family.	Procurator Fiscal informed YES / NO	
6. In all other cases and when authorised by the fiscal you should issue a death certificate to the family immediately or for collection next morning at the latest. Ensure the certificate is accurate; instructions are given on the inside cover of the book. All death certificates must be discussed with a consultant before being issued.	Death certificate issued YES / NO	
7. In non-fiscal cases you should request a post mortem unless deemed unnecessary. Ask ICU consultant for guidance. Relatives need to sign a PM consent form if they agree.	PM consent form signed YES / NO	
8. In post-mortem cases fill in a PM request form and phone the mortuary on ext 31972 the next working day to organise. The technician will then collect notes from ICU.	PM requested YES / NO	
9. The mortuary will advise if a cremation form is required. This should be issued promptly so as not to delay the funeral.		
10. Fill in infection control notification sheet if no PM		
11. In cases of brain stem death, legal time of death is immediately after the 1st set of tests. Death is confirmed by the 2nd set of tests. A certificate should be issued at that time unless Fiscal case. In potential organ donors the ICU consultant will advise on procedure.		

Now discharge the patient from the audit computer. Print out one copy of discharge summary, and send it with this form attached to the ICU Secretary's office.

Signature: _____

Figure 4.3: Death checklist

Sayeed has been on duty when this young woman died. He sounds upset, his voice cracked, but just as he is about to expand on what happened he is cut short. Joan (a senior trainee) focuses on the practicalities, processes and proscribed paperwork related to death. They are working around death but from different perspectives. Death is an expected event in intensive care, sometimes accepted, sometimes not. They know how important it is to get all of the bits and pieces of administration right, to tie safe knots, the finality of death in paperwork. So what is the invisible text beneath the accessible here? What is afoot? This person's death is distilled into a list, the death checklist (the rustling paper), which includes the elements discussed above and others. Should the Procurator Fiscal (Coroner equivalent in Scotland) be called? Is the patient suitable for organ donation? Have the family, referring consultant, GP been informed of the death? Once all of the items on the list are completed and a discharge (death) summary written then the patient can be *signed off*, finalised as Sayeed also does with his last phrase "So eh that's her". Full stop. Move on to the next patient. The checklist process has logic, what Mol has assigned "a local, fragile and yet pertinent coherence [...] embedded in practices" (Mol, 2008, p.10). And as Fenwick argues "clearly in medical practice the particular kinds of materials available and weight of authority shape practice as well as medical knowledge" (Fenwick, 2014, p.3), in this case local policies, these include the Procurator Fiscal and national legal requirements. They have done all of the technical stuff, including creating a death jobs list, but how and what are they feeling?

Handover nurse to nurse at the bedside

As you walk into the intensive care ward heading for the bedspaces another white board is visible and is out in full view of the public. Again it has a bedplan of the unit with patient's names, but in addition it has the allocation of nurses and the floating staff who are involved in care of all of the patients (Image 4.11) The bedspace nurses will have taken note of it in passing.

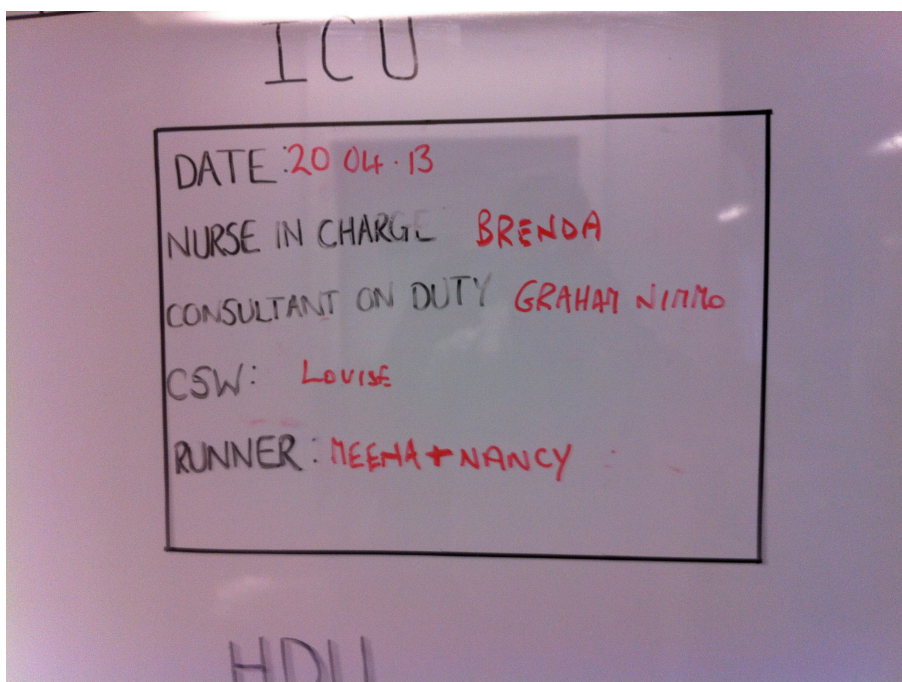


Image 4.11 White board in the main ward

In the bedspace there is also a verbal exchange between the nurses and this is supported by reference to the patient's observation chart, official nursing reports and unofficial notes, most commonly scribed on white paper towels.



Image 4.12 Bed number one

Mike and Callum, two male nurses, clothed in the regimental garb of blue scrubs, stand at the chart board at the end of the patient's bed. They are both Band 5 grade the staff nurses working under the supervision of senior staff nurses and charge nurses. The *Band 5s* are the largest group of nurses in the unit and do most of the hands on work with patients. These nurses will spend the vast majority of the time on their shift with one or two allocated patients. They may be recruited by a nearby colleague to *give a hand* with patient management such as turning or pressure area care, but otherwise will stay with their allocated patient. The chart detailing the progress of the patient's vital signs for twentyfour hours hangs there ready to inform the handover (Image

4.13). They will concentrate on the last twelve hours from morning to evening, the period of Mike's shift, which is just ending.

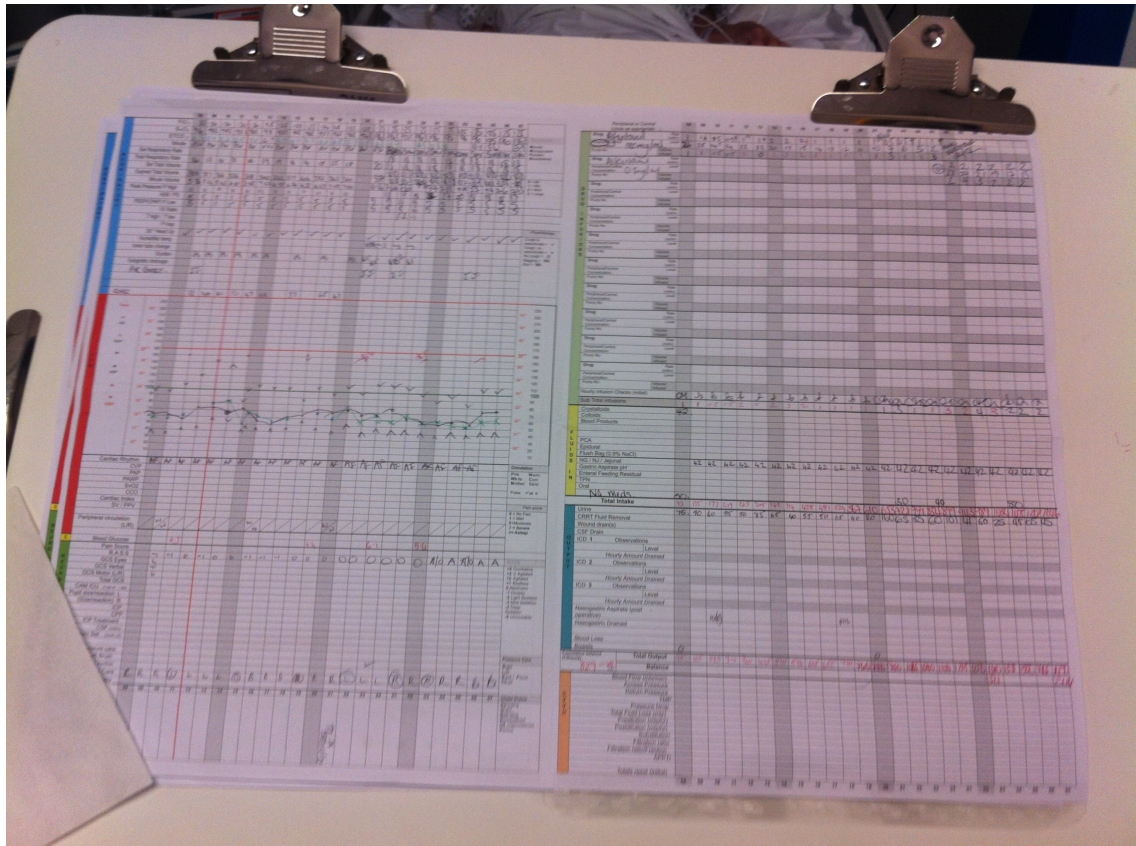


Image 4.13 Patient 24 hour observations chart

The patient's case record (in a blue ring binder), his nursing care plan (in a yellow ring binder) and his prescription chart (Kardex) lie on the bedside workstation. I use the term *his* deliberately. They belong to him and all sport adhesive, addressograph labels bearing his name, his address, his date of birth and, the gold standard identifier, his CHI (community health index) number (Image 4.14). The patient as yet another number. These link to him through the name band on his wrist which (should) have the same information recorded on

it. In his state of unconsciousness this link is critical to his identification and safety.

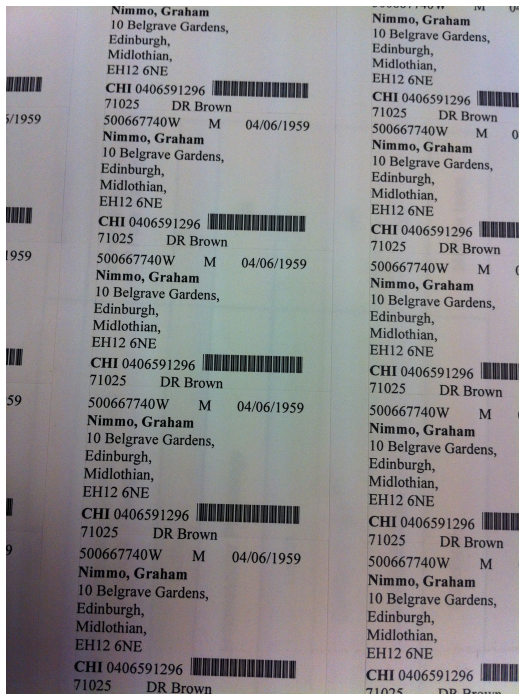


Image 4.14 Addressograph labels

A bunch of coloured pens lies on the bed divider, red for heart rate, black for blood pressure, green for respiratory rate (Image 4.15).



Image 4.15 Pens for charting

The patient lies in the bed with a tracheostomy tube in his neck, on breathing support. He is hooked up to what the staff regard as *normal* monitors, including ECG, pulse oximeter, arterial line. He has a nasogastric tube attached to a bag of creamy-coffee coloured nutrition and a plastic venous cannula in one forearm, a conduit for antibiotics, fluids and painkillers. He has anti-embolic stockings and pneumatic boots on his calves to prevent the development of blood clots in his legs. These immediate, intimate artefacts may appear as impressive technologies to relatives and to patients. To the staff they are quotidian, mundane, hardly seen. To some patients they are horror ridden: “Through tearful eyes I stared at the respirator. That monstrous machine.” Sue

Baier's experience (Baier, 1986, p36) contrary to what the staff might be thinking "but it's keeping you alive". And it's not the ventilator's fault. Perhaps it is enacting her fear and frustration and absolute dependence on it to replace her normal breathing? To the staff the ventilator and the monitored readings are recorded and regurgitated but the equipment has merged into the landscape. And the paper towel enacts handover (Images 4.16 and 4.17).

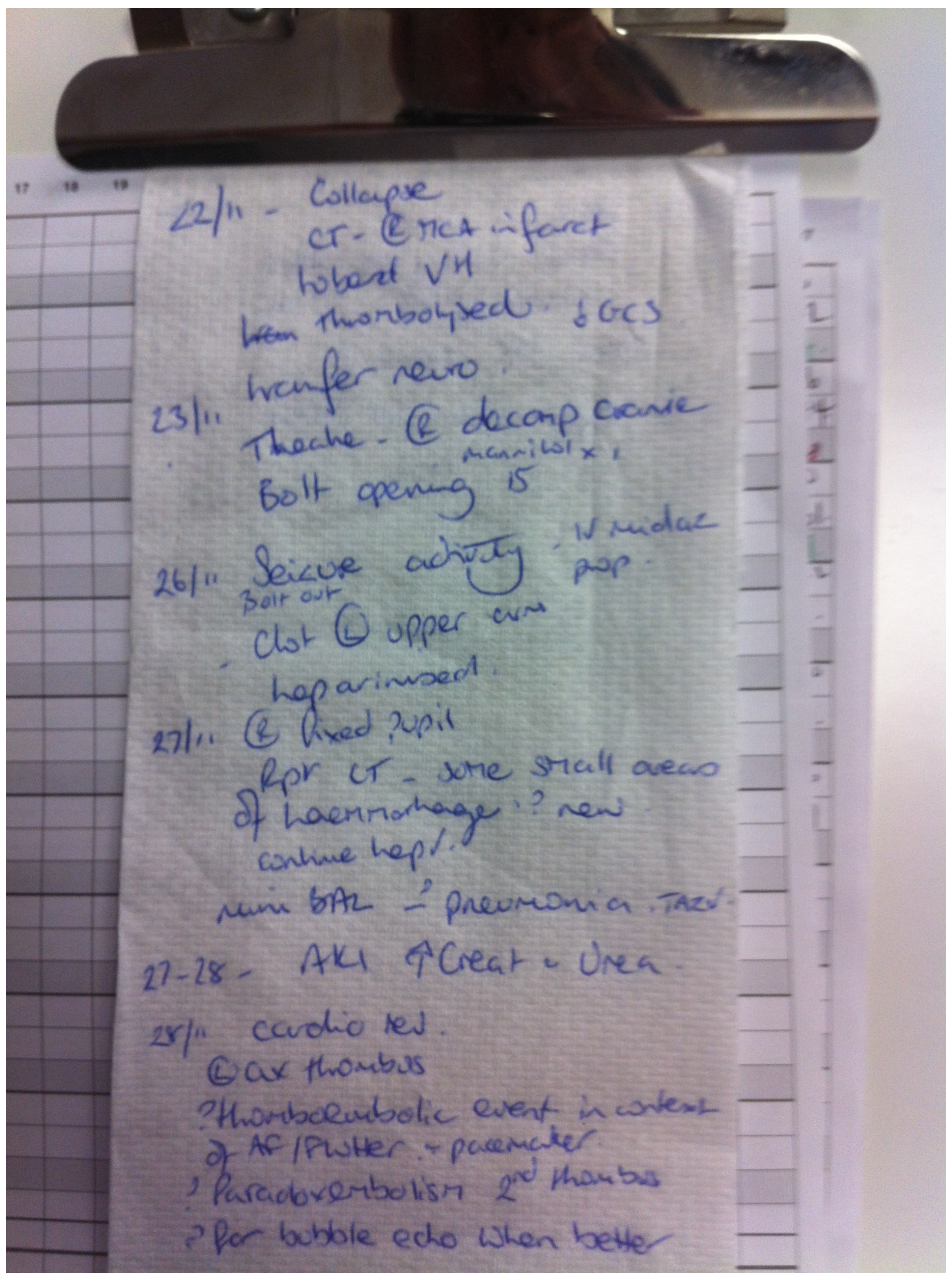


Image 4.16 Handover notes on a paper towel

The handover begins.

Mike "I'll just start from the top. Respiratory wise I put him on external CPAP at quarter past 2 PEEP of eh 7.5 (means adjusting ventilatory support) and he's lasted on that quite well. He's just on 30% FiO₂ (oxygen) and his saturations have been fine em and his respiratory rate has been ok. They haven't said about putting him back onto the ventilator overnight, I haven't switched him back as he seemed, seemed reasonably settled..."

Callum "yes settled"

Mike "Yeah I suppose they've gone up a little bit so whether they'll want to go back on again overnight I don't know"

Callum "His resp rate was sitting around 28 last night"

Mike "Well yes I suppose it's compared with yeah, em, secretions-wise (sound of charts rustling) I did eh suction him there and there (presumably pointing to chart). I think it's sort of, I sucked him there (more pointing?) as well, and it's mucoid more than anything em I had a listen to his chest, sounds em the left base sounds a bit quiet. Em we've bagged him twice, once by the physios about here when I put him onto CPAP, external CPAP, eh"

Callum "Was Diane (physiotherapist) shaking him at the time?"

Mike "Yes, there was a bit more round about then. It seems to be drying up and of course there's less secretions coming out of his mouth today"

The timing of the handover is pre-determined and embedded in the timetable of the unit. The nurses are free to come and go from the room within the limitations of infection control rules: not so the patient who is incarcerated because he is critically ill and isolated because he has diarrhoea. Two days ago a stool sample sent to the lab was reported as being positive for *Clostridium difficile*. And what of the staff in the room for this handover? They are subjects of the nursing off duty. Callum will be here for the next 12 hours.

The language is held together by the approach to physiological systems “I’ll start at the top”. But the top of the patient is the head and face and brain? But the top of the recording (obs = observations) chart is airway and breathing. The chart thus directs the handover, based in itself on the widely taught/practised ABCDE approach. The doctors and the Charge Nurses are encouraged to use a similar approach as defined on the Wardwatcher Handover Reports. Airway, breathing, circulation, disability, exposure is the pedagogic basis of life support and emergency teaching, training, education across the globe. It emphasises that airway and breathing problems are primary as they’ll kill you first. Despite the lack of a specific protocol for handover, this universal approach to the critically ill provides a shared, recognised template which, since it has been embedded in the *obs chart* intra-acts in handover. But immediately the interaction of chart, ventilatory support, narrative connects those in the room with others, elsewhere: “*They* haven’t said anything about going back on the ventilator overnight”. Who are they? *They*, the absent presences, are the doctors who are handing over in another part of the ICU. The patient is being enacted through dispersed yet coexisting and multiple knowledges or

ontologies which are scattered across the physical space of the ICU. The nurses' handover continues:

Mike "Cardiovascularly he's been stable in fact his blood pressure is coming down a bit actually. Heart rate and everything is, I think it's been stable as well, not had any real problems. He hasn't had any real bradycardic episodes like he did yesterday. His temp em has been fine em still oedematous, em and CVPs just been about the same as well Em he's been started on some fluids em for his urine output em and to keep him hydrated because they thought he was in the"

Callum "What does that say? Three and that's 100mls.."

Mike "There's 120 there and that's gone down to 20 and I think that's because they think that he's in the polyuric....."

Mike "Polyuric stage so they want to give him it as they don't want him to get too.... I've just also sent, I don't know if its gone yet, they wanted some bloods doing at 7"

Callum "Is that just to check if?"

Mike "Yeah so they've only just gone as I was a bit late as I was a bit caught up yeah they've gone yeah. I think that's all cardiovascularly. Neurologically he's been the same yeah. The only thing that's changed is the clonidine's (sedative) come down to 9. They've started him on a regime (charts rustling) as they want to wean the iv (intra-venous) clonidine down so they've written him up for ng (naso-gastric) but I couldn't get any from anywhere, we didn't have any on here and none of the other wards, Neuro didn't have it so that we'll have to order it

tomorrow so that if, Colin (trainee doctor) knows about it and said to just knock it down to 9 which we have done”

Callum “And did they say what the plan was after that? Is it to reduce it by day or is it just to get him onto ng. Full stop?”

Mike “Don’t know but for just overnight they said leave it at 9 and then they’ll I think”

Callum “or are they just going to review again tomorrow?”

Mike “Yeah, probably, yeah I think what, I can’t think I can’t remember what he said but you’re probably right we’ll see what happens in the morning. Once he’s had his...I can’t remember to be quite honest. Yeah I think they wanted eh”

Callum “To leave him tonight?”

Mike “Yeah I think you can give him a hundred then you can drop it down for an hour and you give it em 2 or 3 times a day but I think they wanted to check with the pharmacist mumbles and we couldn’t get any anyway so...”

Callum “I guess it’s going to be tomorrow before he gets any anyway”

In the trainee doctor handover uncertainty is visible as a lack of knowledge. In this current transcript there is apparent uncertainty about ‘the plan’ and what is happening with the patient. The nurses talk about the doctors (trainees and consultants), their colleagues and the pharmacist. These are the invisible others in this handover but this discussion sets up the script and the questions which the incoming bed space nurse will then take into that event of interference that *the ward round* enacts. At 11am and at 10pm (acute events permitting) the consultant and trainee doctors walk round all of the patients. The

pharmacist joins them for the daytime version Monday to Friday. At night the nurse in charge is present but not so during the day. Why some elements are included at night, on weekdays, at different times of day would be an interesting area for research but here I have simply laid out these findings from the investigation of practice. The ward round is an opportunity for the participants in the different handovers to meet and share knowledge, information, questions and uncertainties. This is another obligatory passage point for not only the patient but the clinicians. The assemblage is produced by the rituals of clinical intensive care and enacted through the intra-actions of the people, the handover sheets, the charts and blood results, the floating text of the paper towels and all of the other paraphernalia of intensive care.

And what about the implications and interferences that could occur or be set up around this unit as the handovers conclude and the different actors from each start to move towards each other on the waves which have been generated by them?

WARD ROUND

- Tight CO₂ ? Yes/No
- Crystalloid to continue ?
- GCS E₁ V_T M₁ (some grimacing on trapezius pinch)
- NPI still > 4.
- Absorbing feed ok and tolerating nimodipine.
- Plan to resedate at 1300 for CT
(unless you say different!)
- Will need Attracurium for transfer as biting during suction

Image 4.17 Notes for the ward round and they

How can these separated ontologies of the doctors and the charge nurses be patched together? Then there is the family mentioned at the end (as often happens). How will they be linked into the network?

Conclusions

Multiple handovers can be seen to be taking place across the different physical spaces of intensive care. But this is not only a geographical separation. There are clinical, managerial, philosophical and professional related differences amongst and between the practices of handovers and the practitioners engaged in it. The charge nurses concentrate on staffing, resources and making patient care safe. They work through the mundane practicalities of death. The doctors discuss prognosis, treatment, uncertainty and their approach to death which may involve limiting treatment and withdrawing support. In amongst this they make jokes, laugh, sound upset, play with words and messages. The bed space nurses have one patient to focus on. They work through the different physiological systems and supports and therapies. So the multiple ontologies of handover which are revealed through these data are not only about the patient or their diseases but also of the unit and the staff themselves. However despite the ruptures and spaces between the handovers and the actors thereof, there are also invisible yet shared elements which are brought together although the separated participants in the handovers don't necessarily realise this.

Handover in separated spaces, enacted through multiple practices and exposing multiple ontologies, has been demonstrated. That the different staff groups are in independent silos, but enacting the same event, has been

highlighted by this work. The performance of clinical handover has changed as a result of this, although that has yet to be studied. In the following chapter the scattered assemblages and agencies involved in the performance of handover are related. Not only is the narrative of spoken handover analysed, but the work that the textual material that is the electronic patient record does is looked into, both from a clinical and from an educational perspective,

Chapter 5 Assemblages and Agencies of Handover

New blood

*The infusion machines ring
like electronic icicles
dripping in a bowl of synthesized air.*

*Someone else's blood
is flushing through
the back of my hand.*

*Strange to be merged
with an unknown other:
Donation Number: G101 608 802 614F.*

*Now
whose bruises will I bear?
Whose shame or anger flush the cheeks?
Whose dread will drain the vessels of this face?
Whose anticipation thrum these ears?
Whose love assault the tight pump of the heart?*

*Interconnection made manifest
by that scarlet bag that drains
another's life blood through the veins
of recipient CHI 110 541 293;
the previously imagined
me.*

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Introduction

In this chapter the enacted practice of handover is brought together through socio-material assemblages of things, including the vocalised words of staff, and the unspoken presences of the patient, such as monitoring, physiology, history and diagnosis. Particular attention is given to the typed Wardwatcher admission comments. Each of the transcribed handovers is described in terms of the staff members involved, and the text of the chapter moves from one handover to another just as they happen, simultaneously, in clinical practice. The sociality and materiality of the practice of handover is turned to, across the different staff groups in ICU, to better understand it. The othering of the different staff groups and patients in the ICU, and those around the hospital, is framed within the constructs of 'them and us', 'the outliers' and the multiple 'theys' who are both positioned within, and distant to, intensive care. Potential spaces of learning in handover are described and the relations in time, space and practice with what happens after handover are theorised.

Talking handover

What can the patient say?

In contrast to many clinical situations where there is dialogue between the patient and the clinician thus *creating the disease*, as in Mol's writing on intermittent claudication (Mol, 2002, p.23), in intensive care the patient's personally related story, and the ability to answer questions about it, are usually absent. The patient is sedated; they have a tube through their vocal cords to get oxygen in and carbon dioxide out so they can't speak. They are commonly

confused and delirious and they are in a coma. So what speaks for them and gives the doctor and the nurse the ability to do their critical illness? Is it their physiology: the vital signs; their blood results and radiological imaging; the monitors; their specialists be they surgeons, physicians, obstetricians and so forth? The patient is communicating through the technical mediation of their physiology and their bodies rather than through speech and personality or the expression of pain, fear, desperation which they may well be experiencing. The way that these physiological data are interpreted will create the patient and influence how they are handed over.

And what of the family? Whenever a patient is admitted the staff document whom the closest relative is as *next of kin*. Next of kin is printed on the nursing admission document so it is expected that this will be recorded. How the different handovers show engagement with this, or don't, will be examined. At one level handover appears simple and straightforward, a process of passing on the patients in front of you from one set of staff to another. But the handover is a form of obligatory passage point through which the person goes in order to sustain their existence as a patient. There is a lot that is brought into that point, so the handover entails a form of data reduction, concentration, a concatenation where all of the praxes, knowledges, and feelings are brought into the pivot of the moment. In the practice which is handover, and through the interactions of the artefacts, the things described above, the discourses, a variety of people, persons, patients, staff, humans are displayed, constructed, positioned, related. First we look at enactment of the patient/person then at the staff and examine the ways in which caring is enacted through handover. The relationship between the participants in the separate handovers in the intensive

care unit are then examined. The closing event in the doctors' handover is then foregrounded through the unpacking of the *outliers* and the interprofessional practicalities and materialities which they exhibit and illuminate. Finally the educational aspects and issues discovered from handover are presented.

Patients enacted through verbal handover

Talking handover: trainee doctor handover in the doctors' room

Emily "She looks like one of those women that sort of has had a little bit of social deprivation but you know not that much. Likes to go out for a drink on a Friday night, you know that kind lady..."

Jenny "Mm, Mmm alright"

Emily "The sort of type of woman that"

Jenny "And then we just got that renal failure coming from ARU" (the Acute Receiving Unit)

"Liz Barratt"

Emily "Yeah Liz Barratt coming up from ARU"

The first patient is framed by socio-economic status and as a problem drinker but in terms which would not be out of place in a lay publication. The speaker is making assumptions that the listener is on her wavelength and understands the euphemisms. Then on the surface the second patient is framed by the admitting problem "that renal failure" and from the place they are being admitted from ARU, the Acute Receiving Unit. Both of these facts are necessary and

legitimate although they don't identify the person behind/underneath them.

However the first patient is being labelled as an alcohol problem and judged for this: "you know, *that* kind of lady". And what is Doctor Jenny thinking and leaving unsaid with "Mmm alright"? She then goes on to cut short any further discussion or elaboration on the patient from Doctor Emily by changing the subject of the conversation to the second patient. The motivations for this are potentially multiple. Perhaps she feels she understands the situation? Maybe she isn't interested or she is embarrassed to talk about it? Whatever the reasons there is a move from a patient tainted by *alcohol* (with all of its connotations) to a patient who is situated in a different reality, that of a *respectable* clinical condition namely *renal failure*.

The following extracts from another trainee doctor to trainee doctor handover in the doctors' room also tar the patients with a brush dipped in alcohol. Both are the opening statements of the handovers, setting the tone for the rest of the exchange.

Ahmed "Em John Laing in bed three is a 53 year old man who's been here for 5 days with a traumatic brain injury, left subdural haematoma, following a fall. He's got a history of alcohol excess"

Ahmed "Em Stewart McGlone in bed four he's a 39 year old man who em had em, alcohol em then ran onto the road and was hit by three separate cars em he is suffering quite an extensive traumatic brain injury"

Of course there are many clinical reasons for knowing that the patient takes alcohol but to highlight it in the initial statement defining the patient's *ICU identity* suggests that this could be more than a medical comment. Especially if it is written into the daily handover report sheet as here:

“Large and small bowel infarction (dead bowel) and alcohol excess”

or “Admitted with type 1 respiratory failure and alcohol excess”

The presence and place of these *Reports* in the assemblage of handover is explored later in this chapter.

Talking handover: trainee doctor handover

Alison “Jerry McMann”

Ruth “ He fell down the stairs”

Alison “Yeah. He was at a Herring Festival in the Borders” (laughter)

Ruth “Herring?”

Alison” Herring as in the fish”

Ruth “ Festival of fish?”

Alison “Yeah – I don’t know what it was, it involved drinking”

Ruth “Was it by the sea?”

Alison “ Yeah it involved drinking a fair whack and he fell down 15 stairs”

Whispering going on

Alison "Yeah he was pissed when he arrived yeah. Quite a sobering scene"

Ruth "I would imagine so yeah so he had a big extradural with contralateral contusions on several slices through the CT, and went had it evacuated and a craniotomy in theatre, and this morning rather counter intuitively is localising to pain with is right side but not moving his left."
pause

Ruth "What side was the extradural?"

Alison "Left"

Ruth "OK"

Alison "But I wonder if it's the contre....."

Ruth "So he is getting more effects from his contrecoup rather than his"

Alison "Yeah"

Ruth "But his extradural is evacuated"

Alison "Exactly"

Ruth "So yeah ok, cool"

Alison "So he is not moving his left side. They had his sedation off for a while. He started to chomp down on the tube, was moving his right arm. Mm he might have moved it spontaneously once. Definitely was localising to pain, was crossing midline, you know definitely localising?"

Ruth "Yeah"

Once again there is a mixing up of the medical and the mundane, even the vernacular, language and discourse. Handover is not the assumed technical and clean cut so-called *clinical* process for these trainee doctors. There is a normative apportioning of blame for the selfinflictedness of illnesses, a categorisation into *good* or *bad* patients. There are also potentially perilous relations between truth, error and history. And this is a patient who by dint of their critical illness is unable to provide a calibrating history or in legal parlance *defend themselves*. Since the patient has come from the community through the hands of multiple people and has been *handed over* multiple times the potential for myth to be converted into reality is present. This may be the case with the diagnosis (Croskerry, 2011), the person's previous functional status, the social history and so on. Exhibiting benign scepticism, and keeping an open mind, will help to recognise issues and misunderstandings and repair them (Lardner, 1992). As they describe the patient's clinical features they sound as though they are learning from one another. They complete each others phrases. The patient's blood clot is on the left which means that movements in the right arm and leg should be reduced. But it is the left side which is weak. They then talk through the concept of *contre coup* meaning brain contusion (swelling/bruising) on the opposite side and finally agree that this explains the counter-intuitive clinical findings: "Exactly". And the use of repetition "you know definitely" could this indicate insecurity or learning, or possibly both?

Talking handover: nurse to nurse handover in a single room

Mike "Um didn't seem to have any problem with pain today and was bit more settled today, less sort of agitated when we turned him. I bolused him a couple of times (sedation) and he's been sleepy today and hasn't been awake and restless, yeah. Feedwise just the same 43 em. Bowelswise flexiseals in, it's not bypassing I think it's becoming a bit less, less runny actually "

Callum "Cause he's on codeine isn't he? That should thicken up"

Mike "Yes um. Yeah talking about urine output they didn't want him to go back on the filter (replaces kidney function). I think all his numbers were pretty stable so they said they'd leave him off the filter today. I think if anything his haemoglobin was low but they didn't want to do anything about it"

Callum "Yeah I think ... last night but I think Richard (consultant) said as long as it was above 70 he was quite happy with it"

Mike "Yeah it was 75 or 77 have been that again today"

The nurses have already discussed his lungs and his heart and now they move, matter of factly, on to discuss the stomach and feeding, the bowels and defaecation, the kidneys and urine production and then his wound. Lying in the bed is the patient with necrotising fasciitis of his perineum. This dreadful flesh destroying infection requires not only antibiotics but disfiguring debriding surgery to remove the infected skin, fat, muscle and in this case the tissues covering the testicle and around it.

Mike pauses. "Right then the thing's his wound, dressed it twice, the second em I put the alginet em..."

Callum "Is it the jelonet?"

Mike "The alginet"

Callum "Ribbon?"

Mike "Yeah I put those in and some jelonet and I put surgical padding"

Callum "em do you just put them at the bottom of the wound?"

Mike "I put it all the way round"

Callum "Around the edges?"

Mike "Yeah that's where it seemed to be congregating, em and then I put a surgical swab over it em but then I had to redress it and take it down again later but I didn't take out the alginet I just took the surgipad out and put mepores over the top. We haven't got many mepores so I've just been put a sur..., oh I don't know if we've got any surgipads left. I didn't get a chance to chase any em look I've got mefix and em it should be alright for a wee while and perhaps you can get some later, that was at about 7 o'clock when I dressed that. It's difficult to get er.."

Callum "And quite difficult to get into his groin"

Mike "Yes his groin area and round the perineum, I couldn't really get round there but I just wrapped um, um the scrotum and everything with the scrotum and testicle with jelonet all around there and I left it at that"

Callum "Is it still looking quite sloughy?"

Mike "Yes it does actually yes. Redressed one or two wounds on his legs and I put what do you call it?"

Callum "Mepacaine? (no) Jelonet (no) eh"

Mike "Eh duoderm on one of them just quickly as I was running out of time"

The patient being handed over here has had flesh stripped from him not as punishment but in an attempt to rescue him. He is diminished to a wound. He is being enacted through a list of dressings: jelonet, mepore, surgipad, duoderm, mefix, mepacaine. As Sandelowski would have it, this somological character of nursing is "both its greatest asset and its greatest liability" (Sandelowski, 2001, p.61). She proposes that "body work is sacred work" by virtue of its uniquely intimate nature within healthcare but that it is also "profane work" as it necessitates nurses rolling their sleeves up and "performing functions other healthcare workers will not perform" (Sandelowski, 2002, p.62). She also surfaces the fact that these workers of the body are largely women, as it is in this intensive care unit with 92 female and 17 male nurses. Yet these two nurses, by chance, are male. As Mike and Callum talk through their patient's problems and management there is an audible change in their voices, a muting, when they talk about the scrotum and the testicle. Their voices sound distinctly different from their discussions of the other organs. What do they elide? I wonder if it is possibly because both nurses are male, wondering about healing and function and the effect on masculinity? Whereas in other specialist areas of

hospital practice nurses have delegated and passed on many of the hands on practical aspects such as washing, bathing, dressing and undressing, changing position and posture, providing nutrition and a suitable mode for excretion this is not so in intensive care. Lesser and Keane have suggested that this tactile practice is a “major channel” of communication and caring in nursing and potentially keeps the nurses close to the patient (Lesser, 1955, p.804) allowing what Fox and colleagues have described as the “expressive enactment of some of the cardinal values of nursing care” (Fox, 1990, p.230).

Sounds of them walking round the bed

Mike “His legs generally eh is is is ...”

Callum “I think his skin is generally improving”

Mike “it does, it’s not leaking so much em em I changed the tapes and round the two lines and they were pretty clean actually with no more bleeding actually. Around his buttocks there it’s still quite red but I did put some cream on and some down his legs as well”

Callum “What cream did you put on?”

Mike “50:50 cause it seems quite red but it’s not breaking down at all around the sacrum and around there”

Callum” Interesting that...inaudible”

Mike “Yes rustles chart it’s been right and left, all sides actually. That’s about it. His dad phoned this morning, he’s coming in tomorrow and his

sister phoned, no his sister came in this afternoon for a couple of hours to sit with him”

As the nurses walk around their patient’s bed surveying him has he become a prisoner of his disease and the treatment, incarcerated and under surveillance? Baier has this to say: “But in ICU...I felt like a prisoner-a captive of a disease” (Baier, 1986, p.53).

The nurses are in a single room with a reasonable amount of space around the bed and walk away from this part of the handover to the much safer organs of the legs and the skin. Normal service is resumed as they talk about safer territory including the buttocks which they can see as healthy and viable. No whispering but some mumbling is heard here. So they have laced their way through the organs as a thread in a tapestry. What happens next? Have the organs been miraculously conflated, not just as a body, but into a him? : his dad, his sister. Throughout the patient is enacted through organ failures, dressings, treatment and support of the body as Mol puts it “foregrounding practicalities, materialities” (Mol, 2002, p.4) and then through the discourse of the relatives the person appears. The flesh and blood and the therapeutic and technical stuff is woven together by the words. So practicing, could I say rehearsing, the clinical stuff may contribute to the reduction of the individual which is how handover is practised.

Talking handover: trainee doctor to trainee doctor

Jackie “Em Lorna McLean is basically ok. She is still obviously ventilated, she’s only on 30% oxygen but she’s still on 15 over 5, she’s

*still on 10 of single strength norad I think that's come down a wee bit..
and she's on an absolute bucket-load of sedation, she's on 30 of
propofol, 6 of alfentanil, 3 of midazolam I think and she's essentially E3,
she's been E3 M5 if not M6"*

Susan "That's better, last night she was on 50 of propofol

Jackie "Was she?"

*Susan "Which is why I added in midazolam" (sounds relieved: my
assumption from listening to the recording)*

*Jackie "My God. (sounds shocked) I don't know whether, I don't know
whether she's awake or whether she's really agitated"*

Susan "She seems to thrash about"

*Jackie "Yeah, she just thrashes about a bit...She is on Linezolid and
Meropenem, there's no new positive cultures. She got very pyrexial
again there and I took some cultures, I was going to re-culture her lines. I
took some out of her A-line but I couldn't bleed back the flush line on her
CVP, but one lu the second lumen is TPN which obviously we can't
touch, the third lumen is her sedation, which in her I wouldn't like to get
involved in, and the fourth lumen is her norad so I've said to nurse B I
can't..."*

Susan "They were all withdrawing last night"

*Jackie "It does..it with, it, I don't think, I think it's just sitting up against the
wall, you can withdraw it and blood will come out but it just stops as if it*

schloopps against the wall like that it will come out but you can't get it to flow back freely em I flushed when I flushed the blood back in it just went in absolutely easily. I think it's just sitting against the wall I tried to pull it back but I think when she gets positioned em that's her. Her husband hasn't been in that much today, did you know that she's got two wee kids?"

Susan "No. I didn't know that she was married either"

Jackie "She's got a 2 year old and a 5 year old so her husband hasn't been around that much cos he's had to look after them but Jeremy (consultant) spoke to him on the 'phone and updated him."

Susan "That's awful"

Jackie "Em. I know, it's a shame (yawning) oh excuse me..."

They do the multiple representations of the clinical: the intra-action of diagnosis, the MRI scan, the blood tests, the central line and the antibiotics. The handover is done and the patient enacted through the numbers as they talk about ventilator settings, oxygen levels, rates of infusions of vasopressors and sedative infusions, the Glasgow Coma Scale score. They exhibit their clinical knowledge and expose gaps, incoherences and ruptures through different constructs exposing no core essential reality. Then right at the end of handover, almost as an afterthought, they seem to wonder who this person, the patient, is: a wife, a mother, a loved one. Despite this as you listen to the recording it is possible to hear from their voices that they (both female trainee doctors) are bothered and emotionally involved with the patient and her family. This extract

delineates a chasm between the intricately detailed technical knowledge the doctors have for the minutiae of their patient's clinical condition and physiological support, whilst not knowing her as a person in even the most day-to-day senses. They are looking after this woman but appear to have no appreciation or feeling of who she is as a person. Whilst in another handover between trainee doctors humour and caring for the patient are mixed with mutual support:

Ruth "Em Chris Brown is looking much better and (chuckles) is threatening to get better" (despite what they are doing? my comment).

Alison" Mark Cochrane has been absolutely fine today. Went down got some coffee. Didn't fancy a cake"

Ruth "Good. A bit of a highlight of the day eh?"

Alison "Fantastic"

In contrast to many of the other nurse or doctor exchanges both patients are identified through their names. Both are improving and starting to recover from their critical illnesses and that place where they were enacted by their physiology and supporting equipment is now a thing of the past. Their humanity could be seen as returning. They have resumed the ability to communicate as themselves.

Talking handover about Mabel Straiton: Charge Nurse handover

Gavin "The only other ongoing things with her is she's got quite weepy skin at times, it's needing quite a lot of dressing and her minihep

(prevents blood clots) is currently off just now because o' her coag; and her phenytoin (anti epilepsy drug) was withheld yesterday and we're just waiting on levels this morning so we need to see if we're giving that. Next of kin's her daughter. Now there's another chap who phones who is an Alfred Gates. Do you know the story?"

Heather "Yes he says he's a nephew and he's not really and yeah"

Gavin "Well I think it came to a bit of a head. Glenda (another charge nurse) will be able to fill you in far better than me 'cause I'd only be double handling the information"

Heather "OK"

Gavin "So she can tell you this morning"

As in many of the transcripts physiology and support and treatments are laid out explicitly. However, there is difference between the doctors' handover which is filled with humour and speculation, and sometimes fear, and the charge nurses' handover which is informed by technical issues and a problem with relatives. These differences may be related to many things: the different professions and approaches; the different responsibilities with the charge nurses having overall responsibility for management of their staff and of the access of relatives to patients and patient related information; the practicalities of the practice itself. The ages and life experience of the participants may come into play with the charge nurses around ten years older than the trainee doctors.

The intricate relationships between blood tests and drugs and decision making are surfaced. Most patients in ICU will have blood taken every morning usually from an arterial line, a short plastic straw which is inserted into an artery (most commonly at the wrist) and stitched into place. It can be used repeatedly to aspirate blood for any laboratory tests and the routine daily samples are for biochemistry, blood count and blood clotting. Twenty years ago all of the blood samples would have been taken by the resident doctor. Now the majority are done by the bed space nurses although the doctor or advanced nurse practitioner will order them on the TRAK computer system (and print the labels for the tubes and deliver them to the individual bed spaces). The tubes are labelled and sent to the labs by pod through a pneumatic tube system in the hospital walls. At the laboratory reception they are divided up as each set of the three tests is done in a different lab. Once through the automated analysers the results appear in the blood sciences section of the patient's electronic record on the computer TRAK system. As part of the daily review of each patient the ward staff will access the results (using their personal codes and passwords) and in this case the blood clotting is awry so the blood clot prophylaxis is withheld due to risk of bleeding. In order to inform prescription of the correct dose of phenytoin they will consult the phenytoin dose adjustment table. The body (skin), blood tests, drugs and the family enact the single multiple object (Mol, 2002, p.142) that is critical illness. In Mabel's case it is assumed that it is her daughter whom she would nominate as next of kin. What of the *cousin*? Is he a close friend or, as is hinted at, an interloper, an outlier from the family? That information is awaited from Glenda.

Talking handover: Charge Nurse handover

Gavin "It was a nice enough night Betty but there have been a couple of admissions this morning, a gentleman came in to HDU from theatre and, eh, there was a DCN patient now who we're just bringing over. He'll probably be here in the next half hour"

then

Gavin "What it's going to leave you with including Robert Drake (long term ventilated patient) as level 3 we're going to have (counts) 1 2 3 4 5 6 7 8 9 10 threes and three twos"

Heather "ok"

The patients are categorised according to the accepted national frameworks. Both the Department of Health and the Scottish Executive have defined three categories of acutely ill patients:

Level 1: requiring minor physiological support

Level 2: requiring high dependency support

Level 3: requiring intensive care support

(Department of Health 2000, Scottish Executive Health Department 2000)

These categories were created in order to facilitate the planning and implementation of critical care services and units across the country and the NHS. They also delimit the boundaries for safe nurse staffing in intensive care. The fact that they are now applied to individual patients is both fascinating (that

it has been universally accepted) and disturbing since people, patients are being classified and stratified solely according to their physiological support requirements rather than what they need as ill human beings. In the first transcript above the fact that the patient with “BMs on the increase” (indicating that his blood sugar is getting higher) does not have it treated because of his allocated level 2 status, whereas, if he were level 3, he would be commenced on an insulin infusion *at the same blood sugar concentration*. This was not what this categorisation was developed for but is how it enacts patient care, here amplified and perpetuated through the practice of handover. The level of care attached to patients also has major effects on the shift by shift staffing of the ICU hence the detailed review of this in the first transcript above. The nurse in charge of ICU needs to balance the nursing staffing across the patient group in the unit. If a patient is designated Level 3 status they mandate 1 to 1 nursing. If they are Level 2 the nursing ratio is 2 patients to 1 nurse. The difficulty inherent in applying this numbering to individual patients is that it could influence the way that the patient is considered and looked after. If labelled as a Level 2 patient but you deteriorate an implicit bias has been put in place which could impair the recognition of worsening of your condition. In his ethnographic work in the English Emergency Department (ED) Jeffery identified a stratification of patients from a moral standpoint into good (interesting) patients and bad (rubbish) (Jeffery, 1979) whilst Hughes discovered the same categorisations being applied by ambulance staff (Hughes, 1980). Dingwall also observed a stratification of patients into *good and bad* in the emergency setting (Dingwall 1983). The Level 1 to 3 grading for critical care patients might bias ICU staff

towards Level 3, the sickest, most interesting patients. The following written note is from a Wardwatcher handover report sheet:

“Admitted to ICU post emergency laparotomy for perforated DU AS NO SURGICAL HDU BEDS.” (DU is duodenal ulcer)

In this case the patient needs Level 1 care but is admitted to a Level 2 bed due to bed pressures. This is a regular occurrence happening at least every couple of days. This plays into numbering and hierarchy and has implications for staff flexibility both practically and behaviourally. In Jeffery’s study the ED staff identified patients whom they labelled as “normal trivia” implying patients who don’t deserve that level of care (Jeffery, 1979, p.94). So what happens to the patient when they are framed IN UPPER CASE? What do the staff think and feel about this patient? The phrase in upper case is taken verbatim from the Wardwatcher entry and exudes at best annoyance or irritation but could reveal anger. The assumption made when reading this and noting the partial use of upper case for those specific words on this handover report sheet is that this patient doesn’t deserve to be here. “These patients are seen as deviant, in that they are given an unflattering label, are seen to break rules, and are liable to punishment” (Jeffery, 1979, p.104). So the annoyance of the staff can reduce their caring and compassion and influence their actions. My interpretation is based on the use of lower case at the beginning of the entry and the ‘making a point’ upper case “AS NO SURGICAL BEDS”. This is a powerful example of the difficulty in interpreting written (or typed) words as opposed to listening to what is said verbally in handover with assimilation of all of the nuances which that permits: pauses, laughter, snorting, muttering, and also the opportunity to clarify

through questioning. It is well recognised that emotions affect how clinicians interact with and deal with patients and can prejudice their care both positively and negatively (Croskerry, 2002) whilst authority gradients amongst staff can also prejudice care (Cosby, 2004). Once a patient is well enough to be transferred out of intensive care and a destination ward identified, but the discharge is delayed, the patient can be *orphaned*. The unit staff now perceive the patient should be under the care of the speciality staff back in their own ward, so physically and psychologically step back from the patient. In many cases the nursing staff will transfer the patient from ICU documentation (observation charts) to the charts used in the destination area, thus physically moving this aspect of care on whilst the patient is still within the walls of intensive care. This raises the issue of transfers of patients into and out of intensive care and the importance of the handovers and hand ons which happen at these times.

Talking handover: returning to a Charge Nurse handover at 7.30am

Jane "Em have you looked at the off duty?"

Heather "No not yet"

Jane "You've got thirteen plus one"

Heather "OK"

Jane "Em and you've got six Level threes and five level twos. Em moved a couple of folk about last night but they should have been updated on Wardwatcher"

Heather “OK, yeah”

Jane “I’ll do all the housekeepery stuff later on”

Heather “Yep”

Eighteen seconds into the dialogue and what is happening? What do all of these numbers mean? There seems to be shared understanding between the participants. In the charge nurse and the doctors’ handovers the participants are not just handing over individual patients but have responsibilities for the whole ward. The fabric, the staff, the patients and relatives, processes and safety. Staffing the unit with nurses and care assistants is a complicated process. “Thirteen plus one” means that there are thirteen nurses to be allocated to patients (see below) then *plus one*. This is the runner, a nurse who can roam freely around the unit looking for opportunities to assist other nurses who are *tied* to a bedspace/patient. This may be practically with turns or moves, checking certain pieces of kit or equipment, possibly fetching equipment, drugs or fluids from the centrally located cupboards and fridges. The nurse staffing numbers, the ratio of nurses to patients, are enacted by the translations of the national standards described earlier. In this handover conversation, safety, patient care, the ability for staff to take breaks, cover for each other and assist each other are all being considered, although this is not explicit in the recorded dialogue. It is under the surface and encoded in the phrase “I’ll do all the housekeepery stuff later on”. Some nurses would have used the phrase “nursy stuff”. Within the ward the lines of sight between some of the rooms and bed spaces is poor or non-existent. In deciding on placement of staff and how the skill mix is deployed the intra-action of staff and the local environs may be

crucial. The charge nurses are dealing with clinical issues and with person management and resource allocation all at the same time. In this short burst at the beginning of handover the charge nurses have *enacted* the ICU through a practice which seems scripted and well rehearsed. As Mol says, “It is possible to say that in practices objects are enacted” and “that in the act, and only then and there, something *is* being enacted” original emphasis (Mol, 2002, pp.32-33). This is unique to the charge nurse handover. The doctors are absent, and in my discussing it with the medical staff it is apparent that many don’t understand the language and terminology used here such as “thirteen plus one”.

Jane also talks of having moved several patients around the unit. As patients improve and require less organ system support they are moved from the Level 3 side of the unit (the main ward area) to the old HDU area which is all single rooms. When the Wardwatcher audit system is opened on the computer the home page shows a map of the unit with the beds numbered one to sixteen just as on the whiteboard. At the same time as a patient is physically moved they are also dragged and dropped on this computer system into their new virtual bed space. In this handover the updating is mentioned as *should* have been done implying that the process is not watertight and surfacing implications for patient safety. However, each patient has a nameband on ankle or wrist which has their unique CHI number on it as well as a bar code including this information, so that, despite their incapacity, they are identified through the materiality of their labelling. These virtual movements of patients from bed space to bed space at handover link intimately but invisibly with the notices and

bells at the main entrance of the unit. Visitors are asked to ring the bell and await a staff member attending to them (Image 5.1).

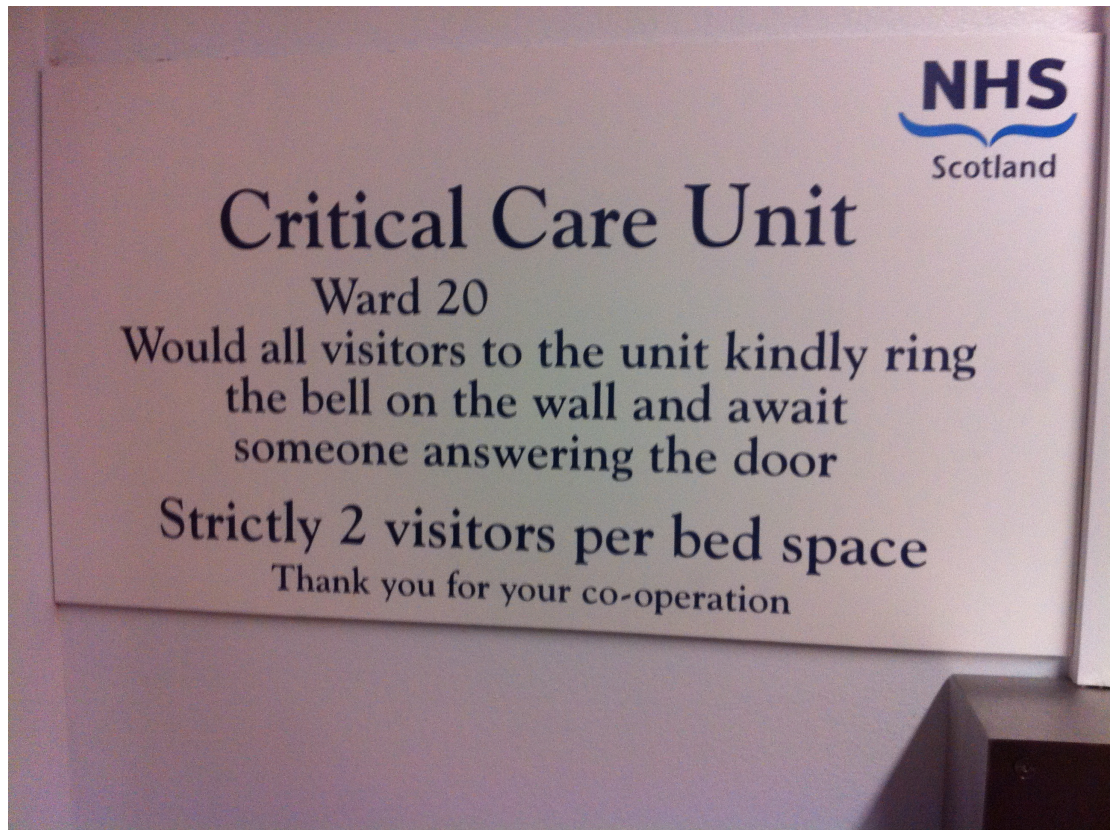


Image 5.1 At the entrance to ICU

They may expect to find their relative in a particular bed. One of the main reasons for asking them to ring the bell and wait at reception is to prevent them from walking in and seeing an empty bed or another patient where their relative/friend had been. Their commonest reaction is to jump to the conclusion that their relative has died when in reality they have simply been wheeled to another part of the ward. And looking back at the transcript where (and what) is the *housekeepery stuff*? Is it what I assumed it would be and where does it happen? It is not located in the recording or at the end of their handover when they wind up. Where does this part of handover happen?

Talking Charge Nurse handover: in the same space

Gavin "You've got thirteen plus one coming on"

Heather "Mm mm"

Gavin "That thirteen includes Lorraine and Luke. Lorraine is on an early and Luke is on a backshift. Gillian is on admin."

Heather "She swapped with me for to get admin"

Gavin "So the way it stands the now you've no runner"

Heather "Yep...she said she'd dip in if she needs to"

Gavin "Well Gillian can dip in but also up in 19 (surgical high dependency ward) they're four plus one for eight (patients) and they've also got Rowena coming on 9 til 5 so I don't think they need five for eight and it's a Bank Holiday so I would presume they're quiet"

Heather "So maybe we could take her down?"

Gavin "I would imagine you could get help from there, em I haven't spoken with them yet"

Heather "OK"

Gavin "Hospital X (meaning the ICU in hospital X) is starting to ease off a bit, they've now got three empty beds"

Heather "Oh, alright, good"

Gavin "But they've no runner and they looked at taking our runner at the time but I said no 'cause it was pretty much Peter and Paul and there was no point giving them a runner just to take them back if we get a referral and Hospital Y (meaning ICU in the third acute hospital in the region) have one bed as well and from what I'm led to believe their staffing is fine"

Heather "OK"

Gavin "So the upshot is you're runnerless but you've got Gillian on admin and 19 look as though they've got an extra member of staff"

Heather "Grand"

Runnerless: what does that mean? If there are enough nurses to look after all of the patients with one to spare (not the charge nurse) then that person can be designated as the runner. They have a roving commission offering support at bed spaces perhaps checking drugs or blood products or helping physically. A key role is to buddy up with novice staff nurses and spend the shift teaching and supporting them. And if there are new admissions their role can be changed. They can convert to being a bedside nurse with individual responsibilities to *take* a patient. The previous handover transcript was delimited to the ICU under study. In this current extract we are taken beyond the physical and practice boundaries of ICU not only to other areas in the same hospital (Ward 19 the Surgical High Dependency Unit) but to intensive care units in the other two acute hospitals in the region. How are these elements connected and associated and what do the networks produced through these

connections look like? Ward 19 is a ten bedded post-operative HDU (Level 1 patients) situated in a different building and one floor up from intensive care next to the operating theatre suite. It takes about a minute to run there from intensive care but in practice terms it could easily be many miles away. It is run/overseen by the Consultant Surgeons with input from Anaesthesia including the Acute Pain Team. The junior doctors are all managerially embedded in the Surgical Directorate but the line management and accountability for the nursing staff is through the Critical Care Directorate. So the nurses in ICU and in Ward 19 share a head nurse and there is a sharing of workload 'helping each other out' as described here by Gavin. As Mol has suggested "an architectural divide ... duplicated by a divide between human populations" in this case staff and patients enacting critical illness (Mol, 2002, p.112). The units are separated both geographically and in terms of the different patient populations and staff, yet there are connections organisationally and therefore through the reductive practices of handover.

How is the person enacted through the free text of typed admission comments?

Steven (consultant) "Do we have a handover sheet?"

Here particular attention is given to the admission texts typed into the Wardwatcher database. The creator of the Wardwatcher software has (on purpose or by happenstance) amalgamated the traditional terms of medical *handover* and nursing *report* perhaps with the realisation that these sheets are used across the professions?

The Wardwatcher system has a number of functions related to handover including the capability to create a computerised day specific Handover Report (the label it gives itself) involving all of the patients in the ward. The importance to staff of the sheet is exemplified by Steven's immediate comment on arriving for handover. Any of the staff can access the system and can input information as free text seen on the left side of the handover report sheet reproduced below (Image 5.2). There is no requirement for a password and there is no audit trail of who has written what and when. So these floating texts lack accountability, and responsibility, although this record "is actively involved in the enactment of reality" (Armstrong, 1988, p.217) in "the body multiple: ontology in medical practice" (Mol, 2002, p.49). Interestingly from a clinical governance viewpoint any of the ICU staff can input and edit this information and there is no record of who has written the text or altered it or of when this has happened. This is very different to the industry based Opralog system cited earlier. There have also been instances where Wardwatcher handover sheets containing patient identifiable sensitive information have been dropped in corridors or the car park.

Date: 11/12/2013 ICU		Handover Report Page	
Bed1: [REDACTED] (Dr CP Derry)	Age - [REDACTED]	Day 32	
Diagnoses: low GCS, tonic-clonic seizures (no previous fits) - status epilepticus. AKI from ACEI. Hiatus hernia, upper GI bleed 31/10.	RS: CVS: Renal: GI: Pain/neuro:	Wound/drain: Microbiology: Family: Status: Plan: ? family in	Chl → family WBS 12B ? N80D
Bed2: [REDACTED] (Mr RG Wilson)	Age - [REDACTED] 0509580351	Day 23	
Diagnoses: Elective anterior resection (colon Ca), 15L bleed, no anastomosis. return to theatre: packing removed, colostomy. further bleed post closing: vein ligated, total colectomy (ischaemic), ?SMV clipped. Infected ascites: washout (latest 5/12). Recent PE: heparin.	RS: CVS: Renal: GI: Pain/neuro:	Wound/drain: Microbiology: Family: Status: Plan: Trachea move	ascitic fluid →
Bed3: [REDACTED] (Ms L Myles)	Age - [REDACTED] 06/11/84	Day 7	
Diagnoses: R MCA aneurysm: SAH with SDH, 4mm midline shift, early uncal herniation. 06/12 Coiling of R MCA and craniectomy with removal of SDH PMH: bipolar	RS: CVS: Renal: GI: Pain/neuro:	Wound/drain: Microbiology: Family: Status: Plan:	Haemophilus inf HNB Viral Pch assted Rece 1
Bed4: [REDACTED] (Mr G Smith)	Age - [REDACTED]	Day 20	
Diagnoses: elective CT drainage R diverticular abscess (ix chronic abdo pain). small pneumothorax during the procedure. hafia on culture (completed mero). I&V for presumed chest sepsis.	RS: CVS: Renal: GI: Pain/neuro:	Wound/drain: Microbiology: Family: Status: Plan:	CT scans → drains OK Surgeons Radiologist
Bed5: [REDACTED] (Mr J Kandasamy)	Age - [REDACTED] F	Day 7	
Diagnoses: SAH early to moderate hydrocephalus on initial CT. Hypoxaemia requiring intubation for neurogenic pulmonary oedema, cardiac index 1.7 l/min/m2, widespread t wave inversion on ECG. pneumonia	RS: CVS: Renal: GI: Pain/neuro:	Wound/drain: Microbiology: Family: Status: Plan:	transient coagulopathy Staph MSSA Haemophilus SKP pneumonia / CSF Clear
Bed6: [REDACTED] (Mr PFX Statham)	Age - [REDACTED]	Day 2	
Diagnoses: transfer from [REDACTED] with SAH, for coiling +/- VAD GCS 12 prior to transfer VAD in	RS: CVS: Renal: GI: Pain/neuro:	Wound/drain: Microbiology: Family: Status: Plan:	Coiling at 1pm X marks ✓ family ✓

Image 5.2 Wardwatcher handover report sheet

The General Medical Council's publication Good Medical Practice contains the following regarding clinical record keeping:

“Record your work clearly, accurately and legibly

19. Documents you make (including clinical records) to formally record your work must be clear, accurate and legible. You should make records at the same time as the events you are recording or as soon as possible afterwards.

20. You must keep records that contain personal information about patients, colleagues or others securely, and in line with any data protection requirements.

21. Clinical records should include:

- a. relevant clinical findings
- b. the decisions made and actions agreed, and who is making the decisions and agreeing the actions
- c. the information given to patients
- d. any drugs prescribed or other investigation or treatment
- e. who is making the record and when.”

There is no direct statement that a signature is required, but 21.e states that it must be documented who creates a record and when.

The Nursing and Midwifery Council's publication on Record Keeping states that the:

"Principles of good record keeping

1. Handwriting should be legible.
2. All entries to records should be signed. In the case of written records, the person's name and job title should be printed alongside the first entry.
3. In line with local policy, you should put the date and time on all records. This should be in real time and chronological order, and be as close to the actual time as possible.
4. Your records should be accurate and recorded in such a way that the meaning is clear.
5. Records should be factual and not include unnecessary abbreviations, jargon, meaningless phrases or irrelevant speculation.
6. You should use your professional judgement to decide what is relevant and what should be recorded."

None of the Wardwatcher Handover Reports have this information included.

This raises the role of signatures in professional practice and highlights the central role of record keeping to handover. The sheets are printed out and utilised by all of the doctors and charge nurses.

The majority of the summaries about patients contain information on diagnoses and the reason for admission to intensive care as in these comments taken from the Wardwatcher admission screen:

"Traumatic skull fractures and subdural haematoma"

“Coiling of basilar tip aneurysm”

“Elective laparoscopic resection sigmoid carcinoma”

“HONK” (meaning Hyper-Osmolar Non-Ketotic diabetic coma)

“Dropped GCS post coiling of left internal carotid aneurysm”

“COPD. Laparotomy”

“Diffuse B-cell lymphoma”

“Bi-basal pneumonia, septic shock”

“Coughing blood, collapsed, resus call, theatre”

Perhaps these are the normative descriptions which might be expected to be created to support the clinical process of handover? But what about the following extracts?

“Polish RTA (Road Traffic Accident) pedestrian vs bus”

“Patient speaks Spanish only”

“Spina bifida with VP shunt: admitted with lethargy”

“ADLs (activities of daily living): walks with stick, manages stairs”

“Laparotomy and hemicolectomy for ileocaecal obstruction. “Mobilises with hoist”

“Admitted to A/E in status, pyrexial, WBC 26.4. Uses wheelchair; epileptic”

“Home vent patient: motor neurone disease”

“Cystic fibrosis patient. BMI <19, PEG inserted”

“HIV and Hep C secondary to IVDU. Low viral load”

These examples are a variety of ways of enacting individuals. This second list of extracts makes reference to the patients' nationalities and their native languages. In terms of communicating with them this is important but in the case of the Spanish patient there are no clinical details, no diagnosis, no idea why they need intensive care. Then there are comments on people with longer term disabilities framed by their lack of mobility and use of aids. The effects of these writings may be explicit and intentional or they may be unintentional but there is a definite undercurrent of people on *home ventilation* or with *disability* being less deserving of intensive care. These aren't really sick, critically ill patients but the chronically unwell who shouldn't be here and so should be excluded. In the terms that Jeffery uses *trivial* and *deviant* from what intensive care is set up for (Jeffery, 1979). The good patients are those with really acute diseases who can be worked on to get better. The diagnosis itself may also be a vehicle of exclusion an exemplar being motor neurone disease (an incurable degenerative disease of the nervous system) with the cognitive and affective subscript in the minds of the staff: “you're doomed anyway”. And “Known to Home Vent team with myotonic dystrophy”. This brings us to the home ventilation patients. This ICU supports over 140 folk who are out in the community (in this case Scotland) on varying levels of long term ventilatory support mainly in their own homes. When they become unwell they come to the unit, from places all over such as Lewis, Monifieth, Penicuik. They often need

admission for apparently mundane issues such as constipation. Not really a *critical illness* but if your abdomen becomes distended and your ventilator can't cope with the increased pressure which it is having to overcome to get air into your lungs it's pretty critical to you. This description should help inform your understanding of the phraseology which is used to describe these patients through the computer derived Wardwatcher Handover Reports.

Yet in many of the Wardwatcher Handover Report comments we are left to contemplate the technological enacting the patient: a ventilator, a VP shunt (treating hydrocephalus), a walking stick, a hoist, a wheelchair, a PEG (gastric feeding tube). The individuals are delimited by their apparatus not by how it helps (or hinders) them in achieving a worthwhile existence. Has the person been lost?

Then there are patients enacted by their infections and their potential background history. In this extract the patient is identified as having HIV and Hepatitis C as an *IVDU* (intravenous drug user). So the clinical information is disseminated (too widely?). And then the information about the *low viral load*. This can have at least two interpretations. The first is that it indicates a good prognosis for the patient. The second is that it reduces the risk to the staff looking after the patient. The inclusion of this specifically is puzzling.

And sometimes a glimpse of the human:

*"54 year old gentleman with myeloma who had stem cell transplant
1997"*

"large and small bowel infarction and alcohol excess"

“Admitted from theatre following laparotomy for perforated duodenum, smoker”

“Admitted with type 1 respiratory failure and alcohol excess”

“Found collapsed outside pub GCS?? CT: a few frontal contusions”

In the discourses sometimes the person wins through. Despite the alcohol history, the monitors, the blood results, the disease and the diagnosis the rebellion of being human (human being?) unbrackets the so called facts through humour: a thread shifting the *deviant* back to a space of normalcy. Mol says “explained away” (Mol, 2002, p.47) but why not “explained into existence?”. So the staff do the clinical stuff but do they use the story to remember patients? Many patients have similar clinical problems such as traumatic brain injury, brain haemorrhages, septic shock, cancer from colorectal, haematological and other sources and are undergoing surgery, chemotherapy, radiotherapy and often combinations of these. How to remember the individual person if not by diagnosis, treatment, bed number, their story? The patient’s name doesn’t seem to be enough.

A full list of the one hundred sampled texts is in Appendix 3

Care enacted by staff of staff

Charge Nurses

Jane “And that is really, everything else should be in order”

Heather “Thanks very much”

Jane “No worries”

Heather "You back tonight?"

Jane "No I'm not"

Jane and Heather have completed handover. They have a brief personal interaction then go their separate ways. But they are supporting each other.

Trainee doctors enacting near death in handover, both sitting in the doctors' room

Laughter

Ruth "Has he slowed down?" (patient with fast irregular heart rate)

Alison "No he's still battling along"

Ruth "Is he still on his amio?" (heart rate stabilising drug amiodarone)

Alison "He had 300 (mg) and he is getting an infusion at the minute. Em cardiology saw him today"

Ruth "He would have finished his 24 hours though, have we just continued it?"

Alison "We just continued it. Em Cardiology saw him today and said nothing particularly helpful. Continue the amiodarone and see if it works, if not consider digoxin"

Ruth "Wow, that sounds hopeful"

Alison "I know, I thought "wow that's brilliant!"

Ruth "Yeah"

Alison “Anyway” (both laugh)

Ruth “So they were giving him the amio peripherally, slowly while Dr Hamilton (consultant) put the central line in and while she was waiting on the x-ray and I was like saying “just to bear in mind when I went to his (cardiac) arrest last week he arrested while they were giving him his amiodarone (Laughing) and she was like....

Laughing from both

Alison “Yeah”

The patient is receiving a potent drug which when he had it before put him into cardiac arrest. Picture the scene just described by them in handover. The patient is on a ventilator with the monitor screen displaying heart rhythm, blood pressure, oxygen saturations hanging above his head. He needs a central venous catheter, a sixteen centimetre long drip with four hollow lumens which is placed through the skin into a large vein (usually in the neck) and advanced into the large vein returning blood from the upper body just above the heart. This is enacted through the ICU drug monographs for amiodarone and noradrenaline which state that these drugs should be administered through a large central vein. The consultant is at the bedside with an ultrasound machine used to locate the vein in the neck which is to be punctured. The image is displayed on a small screen in real time and the carotid artery and internal jugular vein are visualised. The operator has scrubbed up and is wearing surgical gear: hat, mask, sterile gown and gloves. The skin has been prepped with disinfectant and a fenestrated surgical drape applied. Local anaesthetic has been injected

under the skin and the consultant is about to pierce the vein with a large needle. This can be tricky and potentially dangerous but the combination of the correct kit and a standardised procedure make it less so. But what is the effect on the operator of the trainee doctor reminding her, at this crucial moment, that the patient is at risk of cardiac arrest as is described above? And this is conveyed across the space of handover as handover continues for the same patient.

Alison "That's it yeah. So he is still on a rate of about 140. Blood pressure is fine. And that's him. We need to see if he slows down or not. There's not a real big issue there. At the moment, but obviously amiodarone did precipitate a rather"...laughs

Ruth "interesting event"

Alison "Yeah"

Ruth "I felt so sorry, cause it was really difficult because they'd do CPR and give him adrenaline, and I was like there every so often checking kind of eyelashes cause occasionally he'd blink, and I was like, 'he's got reflexes check a pulse, check a pulse' and they'd check a pulse and it would be there, but then within like about 30 seconds it would start to go but he was still blinking and while he was still awake they would have to restart CPR. Just quite difficult"

Alison "Yeah"

Ruth "I couldn't get any airway into him because he was always awake and biting down. And that's quite a weird situation when your doing CPR"

*Alison “CPR (laughter). Ah it’s quite an interesting **story** though, its one of those ones you’ll remember. You won’t forget that one will you?”*

Ruth “And I was at the head going ‘now we’re just giving you some medicines for your heart’ and I’m holding this mask on really tightly, ‘this may be a little bit uncomfortable’ (in American accent)... Oh my God, when I let go I couldn’t get my hands up”

They are recalling the events of the patient’s cardiac arrest. What a story to tell. But who owns it? From their discussion it sounds as if Ruth will take the narrative and the experience with her through life, a clinical epiphany in her experiential learning. There is nervous laughter as they work through some of the difficulties encountered during the resuscitation. This resuscitation process is driven by the UK Resuscitation Council Advanced Life Support algorithm and *usually* the patient is unconscious. But in circumstances like this a number of factors conspire to maintain consciousness: rapid application of life support, highly effective chest compressions, drugs, underlying cardiac function but the result is consternation. The doctor managing the airway is at the head of the bed, holding the jaw and the face mask looking directly into the patient’s eyes (albeit upside down) and seeing his reactions. Why does she use an American accent? What was she thinking? Did she debrief with anyone else or was this handover the only opportunity to do this? They lapse into anecdotage but there are serious undercurrents of fear and puzzlement, survival and the appearance of handover as a space not only for learning but for peer support and for confession. Handover takes on yet another guise.

Them and us and outliers: the hospital others

Emily “Janet Murdoch, but she is a new admission. Em this is a 76 year old lady with a history of endometrial cancer (door opens and closes) which has recurred twice needing 3 major operations – one in 2002 for her hysterectomy, em a hemicolectomy back in 2008 em, for a large bowel obstruction, and she came in with a small bowel obstruction em and was taken to theatre today em where she had an em bowel resection. Bits of ischaemic bowel which were anastomosed”

James “Resected?”

Emily “Resected and put back together and em and she had been post op since actually 2 in the afternoon but initially noted to go into fast AF which was treated with loading of amiodarone, and at that point they noted that she had dropped her Hb from 100 to 50, and she was transfused eh, eh, eh 3 units of packed red cells. Em admitted to HDU for observation, however when she got here we noted that her Hb had been dropping and we initially noted this in her blood gases and from an admission formal blood to a check formal blood we noted she had gone from a Hb of 87 to Hb of 53. Em got the surgeons back in while we were transfusing her some more packed red cells. They thought there was bleeding inside and they took her back to theatre overnight and found 3 litres of blood and clots intra-abdominally so they’ve taken all that out. They found, they found a fairly small oozing point but no major bleeding points. Em they’ve kind of got her back to us within the last 2 hours and

she has had 8 units of red cells and 4 units of FFP over the course of since 2 o'clock yesterday"

The othering of staff, patients and relatives in the ICU, and of healthcare professionals around the hospital, and across the healthcare system, are surfaced from the data and explored.

Throughout all of the handovers there are repeated mentions of *they* and *them*. Whom they are varies with the circumstances. In this transcription it is *the surgeons* so there is connection and communication from within the handover to areas geographically outwith intensive care and between specialities.

In Charge Nurse handover another patient is being discussed

Jane "he was just brought for observation of his GCS. Em went off yesterday morning and dropped his GCS again. Was intubated and scanned. There was no significant change with the scan"

Heather "OK"

Jane Em but they decided they were going for a VAD insertion last night which they did, and so...his pupils are equal and reacting. He is 1t2 and his wife has been to visit him this morning already"

Jane describes a clinical deterioration (the patient *went off*) which required intervention. In this extract who *they* are is not explicit. Invoking knowledge of the system a number of *they's* would be involved in the decision making: the Intensive Care Consultant, the Neurosurgical Registrar and Neurosurgical

Consultant. The decision would be made in discussion, consultation and negotiation.

The *theys* of bedside nurse handover

Nancy "She's had two siggys done recently a rigid and a flexy and the last flexy one was yesterday and they said there was no volvulus and they got quite a lot of faecal material and fluid out. Had an enema yesterday, had a fair (emphasises this) result from it to begin with and then overnight her bowels moved again, most of it was watery. She has had C Diff. Specimens have been sent off. I think the first one came back negative. Er urine output has been kind off fair between 15, 30 so it's just kind of bordering. She's had ascitic taps done. One on her right side has got a bag on it from the old one...."

Julie "On the right side?"

Nancy "On the right side's got a bag over it at the moment and there was two and half litres, I think, came from it when they did tap it originally and because I had her on that side there was about 400ml came out of it this morning and a hundred twice overnight. On the other side she's got a small needle prick which has got a small bag over it as well and there was a very little from that, about 50mls, and that's kind ae clear fluid the one on the right side is more a strawy kind of fluid that's coming out of that"

Julie" Mm hmm"

They are mentioned twice in this short exchange but in this case the *theys* are two different sets of staff. The first are the Gastroenterologists, expert in

managing diseases of the gastro-intestinal tract. The second are the medical staff in intensive care. A number of issues are raised by these uses of *they*.

Looking at handover sheets and patient case notes in other specialities e.g. Haematology, there is often a mention of intensive care and the decision to *escalate to full intensive care if deteriorates*. So this is a two way process from each speciality, with the enactment of networks around the hospital involving intensive care. There is another significant issue in using *they*: anonymity. The term does not allow any line of responsibility or communication to be displayed. This has implications for patient safety and also for professional practice itself. Who will make decisions for this patient? So we go to the case notes and often we find “referred to Cardiology”, “Surgeons contacted to review”, but no name, bleep number, phone number. Ironically when the intensive care consultant on for 24 hours does the night ward round at 10pm the bedspace nurses will report that they’ve been handed over that *they* (the day medical staff) have made this decision or recommendation not realising that part of this particular *they* is the consultant they are speaking to who was on the daytime ward round and involved in the decision making processes. Continuity in practices. This raises another issue of the lack of appreciation by the different professional groups of their different work patterns despite the fact that the nurses and trainee doctors do both day and night shifts so see the unit at all times. But that is another study.

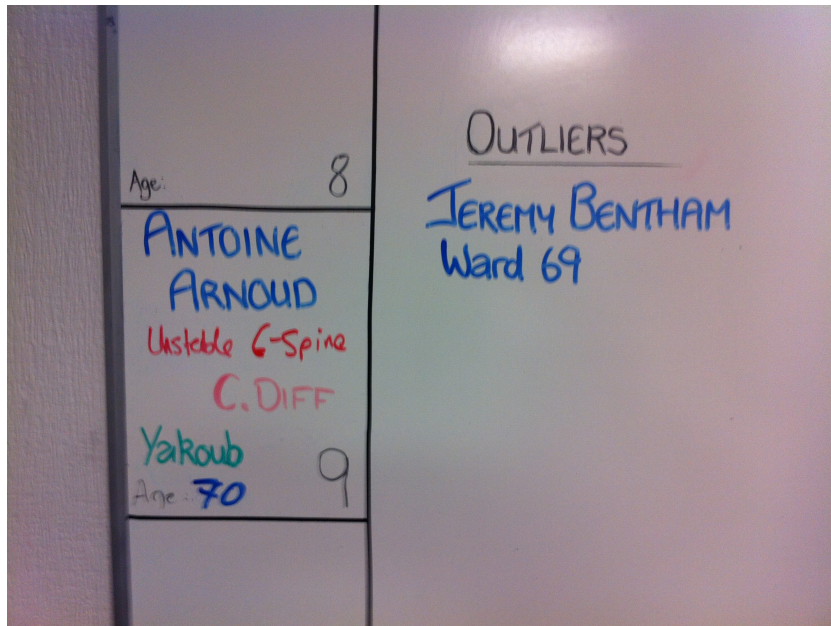


Image 5.3 Outliers

In the doctors room the handover of all of the patients in intensive care is completed. Attention moves to the board and having condensed down on the patients in the ward the handover then expands beyond the patients in front of the staff to others elsewhere in the hospital. The Outliers. How has this concept come into being and why has this term being chosen?

Ian OK: "any outliers?"

Angus "This new guy to talk about over in ward 18 Tom Dickinson, 75 year old guy diagnosed with small cell carcinoma (lung cancer) October last year. Since then has had 4 cycles chemo and twenty fractions of radiotherapy which apparently is all done and dusted as from 10th last month"

Ian "Yep"

Angus "Admitted 19th with lower respiratory tract infection and was started on antibiotics which finished on Friday. His admission x-ray looks as if there is lots of interstitial shadowing and a diagnosis of radiation pneumonitis (lung inflammation) was made and he has been started on steroids on 19th for that for a couple of weeks"

Ian "Yep"

Angus "When I was called he was sitting with an FiO_2 of 35 and sats of 97 but was very drowsy and he has had a PCO_2 of 10 with hydrogen ion of 49. He is comfortable sitting there, chatting, joking"

Ian "OK"

Angus "He is getting a repeat x-ray which hopefully should be up on the screen so we will have a look at that. He had an x-ray on Friday and his interstitial changes in his lungs are absolutely atrocious. I don't think there is much that we could offer, but obviously I don't know too much. The only person I have seen with radiation pneumonitis was a guy from Durban who came in and after about 2 months he just withered and it was awful and died basically"

Ian "Is it reversible?"

Angus "With steroids it is partially reversible"

Ian "OK"

Angus "I think it is variable"

Ian "What is he like functionally?"

Angus "Up until last month he was playing rounds of golf. He has ischaemic heart disease with one previous MI (heart attack) in 89 and his Type 2 diabetes is diet controlled and he is hypothyroid"

Ian "Right, and potentially chemo radiotherapy is palliative?"

Angus "It is with a curative intent in that it localises. He has had a few scans and it has not shown up anywhere else"

Ian "OK"

Angus "He has also had prophylactic cranial radiotherapy which reduces your chances of getting cerebral mets (metastatic cancer) by 50%. I think from what the Medical Oncologist was saying over there they would expect about 1 in 3 cure. With him it maybe slightly less because of the way they had to change the actual administration of his chemo and radiation timing of things. It's not quite ideal but should we say he still has a 1 in 5 chance"

Ian "Perfect"

Angus "I think more than the cancer it is radiation pneumonitis is something we are not going to be able to fix"

Ian "What ward did you say he was on?"

Angus "Ward 44. Again from Dunfermline they did all these literature searches and very few people that go on a vent and come off. There's not much other than steroids has been shown to work"

All of the patients in ICU have been discussed and now we hear about those located out in the hospital: these *outliers*. These are patients who have been referred but don't require intensive care or patients who have been discharged from the unit and need follow up. *Outliers*. What are the connotations of the word? The deserving or the undeserving? In statistical scientific medical research it would mean *deviant* yet the term outlier is used comfortably in daily clinical intensive care practice to talk about these vulnerable sick people. And listening to this recorded discussion, there is uncertainty, solidly realised. And yet his chance of survival located as *1 in 5* is deemed "perfect" by the ICU registrar. What does he mean? Is he thinking of the decision about "should I admit him to intensive care?". Yes is his decision as 20% survival isn't too bad (especially if you're in the 20%). Let us examine the system within which this patient sits. It has fluid and transient elements but a solid infrastructure. The hospital is comprised of specialist clinical areas each with its own physical ward(s), departments, laboratories, offices for secretaries and coders and administrators and managers. Respiratory, Cardiology, Rheumatology, Dermatology, Haematology, Urology (surgery), Colo-rectal (surgery), Neurology and Neurosurgery, Gastro-Intestinal, Renal, Metabolic all labelled by the organs or physio-anatomical systems that become aberrant. Other departments are Infectious Diseases, Oncology and Toxicology. These are named for the diseases or poisons which result in illness. Yet there is a third grouping: Medicine of the Elderly (also known as Care of the Elderly), Palliative Care and Intensive Care. Some would say the last refuges of holistic care. Returning to the patient in Oncology we find that he is within a physical area where special ventilation systems have been installed to prevent infection spread and alcohol

gel dispensers, plastic aprons and gloves are everywhere. If the patient is neutropenic (low white blood count) and at risk of infection family and staff wear these protectors and possibly face masks. The nurse meets this fragile, scared patient for the first time wearing a mask and gloves, unable to convey a smile whilst touch is transmitted through the rubber of the gloves, haptic dissolution in deference to infection control. Tom the Oncology outlier is performed by the conflation of his diagnosis and his treatment, his investigations and his sense of humour, his past history and his co-morbidities. Throughout the handover transcript there is a to-ing and fro-ing about his status as a potential intensive care admission. Rather than suggesting imprecision this is more an indication that the flow of thinking and decision making in intensive care is anything but linear.

In all of these situations a myriad of intra-actions enact the decision. Clinical examination findings and organ system failures, prognostic features on CT scanning, the features of biopsies viewed down the microscope, the results of genetic probing are all assembled to support or refute the conceptual and physical conversion of the Oncology patient (in that department) to the intensive care patient (moved to that department). The place of cultural and affective influences is unclear. Similar issues also involve the final patient of their handover.

Ian "OK Em there is also a guy up in 21 (surgical ward) that we went to see earlier, Jim Carter who has been in (ICU) previously, Hartmann's (bowel operation) back in March, rehab in hospital Y. Came in with a fistula between bowel and bladder"

David "Is this the chicken bone guy?"

Angus "The chicken bone guy"

Ian "Oh Right"

Angus "He has been back on the ward for a couple of weeks and has developed pulmonary oedema. We went back up last night to see him with Robb (consultant on call). We started him on a GTN infusion (glyceryl trinitrate, dilates blood vessels improving heart function). He was looking a bit brighter and certainly more comfortable. About 2 hours later got a phone call from a totally useless FY1 (junior doctor) who said that his sats are now 80%. The way we have left it is that we aren't getting involved and have suggested they speak to the medics and care of the elderly and things like that. We have left it that we are not getting involved"

Ian "Unless the medics say that we should do?"

Angus "I think if the medics go in and re- refer him then we will go and have a look at him, but it's not entirely clear. Will (ICU consultant) had said for CPAP, we would offer CPAP if necessary. Grant (ICU consultant) said today it is not somebody we would take to ICU"

David "Ruth (ICU consultant) when I spoke to him last night came in and said CPAP was not really going to sort the thing. There was no reason for him to have gone into failure in the first place"(can't make out words)

Ian "OK - there's not anything written formally in the notes that he is not suitable for ICU"

Angus "No there's not. Should have been documented."

Ian "Cool, no worries. We'll see what the medics make of him...."

The same patient with the same issues is seen by three different intensive care consultants and there are three opinions on treatment, support, prognosis. And there are different views from the Physicians of the ward. Intensive care involves support and treatment. If there isn't a reversible, treatable problem which has caused deterioration then support, in many cases, will delay inevitable death rather than extending meaningful life. The greyness or subtleties of these distinctions have in this patient led to his critical illness being enacted in multiple ways. Just like the previous patient. Just being similar, being equable; being fair. Can there be multiple ontologies regarding one patient far less their illness? The patient's illness is enacted as a point of critical decision making about admission and prognosis and yet he is remembered as *the chicken bone guy*. In the handover multiple worlds are described and different practices seen to be employed in different environments. These are each enacted through unique assemblages of socio-material elements.

And in another end of handover discussion between trainee doctors about an outlier....

Alison "Yeah and there's one last one, Rod Patrick, that was a phone call"

Ruth "They just keep coming"

Alison "I know. There was a phone call from one of the Speciality Consultants, bit of an arsehole actually. I mean eh (laugh) just really stropky"

Ruth "What's the name of him?"

Alison "I don't know what his name was"

Ruth "I know there's one I've heard that's very specific about his patients"

Alison "I've never met him, but he phoned me up sort of accusatory that we hadn't been to see somebody that hadn't been referred and I was a bit oh non-plussed by it all"

Ruth "What. Are we psychic now?"

Alison "I thought that, aye. So unless she had been referred to someone else earlier in the day, but certainly I had never heard anything about it"

The patient is in the midst of this debacle. The junior doctors sound indignant at the interaction with the speciality consultant. The consultant sounds very concerned about his patient, the outlier. But where has the system failed in all of this? This is an indicator that handover is a perilous place (Mukherjee, 2004). Instead of a conciliatory approach the rift between the clinicians is widened, as evidenced by the discussion which we can hear and this is to the potential detriment of the patient. As Mol says "differences aren't necessarily bridged: they may be kept open-with suitable hard work" (Mol, 2002, p.104).

Learning in handover

Alison talking about Betty McGlone "There was some feeling that over the weekend she has gone downhill a wee bit because yeah we decided to start feeding her down the RIG (feeding tube inserted through the abdominal wall into the stomach) on Friday and"

Ruth "Aw-aw"

Alison "So we did all that, we looked at the abdo x-ray and everybody just went, we don't know what it shows, we'll wait and see. So in the interim we have got an abdo ultrasound of her abdomen, marked the spot, tapped it, horrible smelly, pussy, it might have a bit of feed in it, just disgusting. (sounds disgusted) So that has been sent off. No results available as yet but they might be available later on so they might be phoning with the results for that or it might not be back till tomorrow. She is still on"

Ruth "Fluconazole, mero"

Alison "Yeah and vanc as well I think"

Ruth "so vancs added in so she needs a vanc level?"

Alison "I have ordered it em so the plan was"

Ruth "Is the vanc for covering her chest?"

Alison "I think so because her chest has gone off."

Ruth “Yeah. Do you not just think that’s because her belly is so massive it swishes?”

Alison “I mean that would make sense”

Ruth “But she did have those changes in her right base didn’t she?”

Alison “Yeah”

Ruth “and she’s got consolidation, ok”

Alison “Yeah. On her CT there is consolidation worse on the right than the left at the bases. So ..”

Ruth (interrupts) “so that’s collapse/consolidation”

Alison “the plan had been actually after discussion with sort of I think Miss Franklin and Mr Gosling who was the Consultant Surgeon on overnight that we should put a drain into that and drain it, and they were going off to speak to the Radiologists to book that”

The trainee doctors discuss the patient’s nutrition and Ruth sounds concerned about this. They then have a back and forth discussion about her antibiotic management performing knowledge which they don’t own or are unsure about. Here is a potential space for learning.

The bedspace nurse to nurse handover is just finishing

Julie “Has Neuro been? Is there anything in her meds I should be aware off?”

Nancy “ Just her chlorhexidine...her mouth’s so sore. She’s on sodium valproate and phenytoin because she was having seizures (giggles) when she was up in Neuro. Sodium valproate can just go down her NG tube that’s there and her phenytoin (sound of paper rustling) the other things are scored off, flucloxacillin still getting, her ciprofloxacin still getting”

Julie “Right that’s...”

Nancy “Using the...as a mouth wash that’s been used as a mouth wash I’ve just been sort of squirting that in and suctioning using the suction catheter. So that’s everything. Any questions?”

Julie “Right that’s fine we’ll carry on with that. I think you’ve covered everything I need to know the now”

Nancy “That’s fine have a good day”

Julie “Have a nice day”

Nancy concludes with an invitation for questions to be asked. This may simply allow clarification on particular points but is also an opportunity for feedback and potentially for learning.

The first extract gives us an insight into the peer to peer learning which can be enacted during handover with what could be called the trainees’ unofficial curriculum, unwritten but practiced in the handover. Comparison of the two transcripts reveals differences in the discourse which deserve further attention. In these, and throughout the other handovers recorded, the trainee doctor to trainee doctor interactions demonstrate an inclusion of multiple questions and

discussions on facts: pathology, physiology, pharmacology, diseases and treatments. This reveals a difference between trainee handover and handover between trained, experienced professionals. This could also surface a difference in the everyday learning practices of the individuals labelled as trainees (here to learn) and the substantive staff (the workers) and has implications for a pedagogical response regarding lifelong learning in this professional environment.

What happens after handover?

And finally: the phone call and the bleeps/pagers

Jackie “The Neurosurgeons phoned us about a 20 year old girl who had fallen off a bridge: she’s got a sub-dural with mid-line shift and long bone fractures and they phoned us to say em, do you think, they phoned us to say do you think we should bring her over to you for a bolt and then send her back to the Eastern or not but Dr Simpson (ICU Consultant) said they should fix her long bone fractures and she can come here afterwards and that’s fine but I don’t think you should transfer a patient 3 times from there to here back again and then back to here”

Susan “That’s fair enough”

Jackie “What’s your numbers?”

Susan “31228 and 31220”

During the handover Susan, who is carrying the on call pager for intensive care, has received two ‘bleeps’. She now *hands* the telephone numbers *on* to Jackie

so that she can respond. One is from the labs with urgent bacteriology results and the other is a referral of a patient in one of the wards in the hospital. You will have realised in reading the other transcripts that the doctors' handover in particular is interrupted by telephone calls and by people coming into the room as well as by the pagers. So in yet another way through the materials of intensive care handover the boundary of handover is breached. But this probably needs to happen. The space of handover cannot be hermetically sealed. Communications about patients need to continue and emergencies flagged up and dealt with through meaningful interruptions (Nimmo, 2008). And this leads to the transition of handover into the work of the day or night. The charge nurses and doctors leave their rooms and start to interact with the staff around the unit and beyond. The nurses in the bed space are left to look after their individual one or two patients with colleagues, runners, care assistants, charge nurse, doctors around to support them. As each group moves away from their own handovers they start to meet and interact with those from the other handovers. As if multiple pebbles had been dropped into the pool that is intensive care the ripples of all of the handovers move towards each other causing *interference*. In physics this interaction means it can have a positive, a negative or a neutral effect. That would be an interesting study to perform. And the doctors are also looking to the outliers so the ripples of handover in intensive care spread around the hospital creating multiple points of interference.

Conclusions

Handover is revealed as anything but a bounded practice. With and through its enactment there is not only a coming together of natural, technical and cognitive elements but an intra-action with other assemblages in both social and material ways across the physical, geographical and professional boundaries within the intensive care unit and across the hospital.

In this chapter the practice of handover within and between professional groups has been examined. How this is enacted through practicalities, materialities and the differing assemblages has been told. The differences, and commonalities, in handover between different professional groups and between experienced staff and trainees has been surfaced. It has been seen that emotions such as humour and fear play through the doctors' handovers but are difficult to identify in the nursing handovers. Potential reasons for this have been suggested. How patients are enacted through numbers both clinically (e.g. Glasgow Coma Scale Score) and in terms of Levels of physiological support and the effects on the enactment of patient care have been explicated.

How the practices of the individual handovers cross each other's boundaries, both during and after the events, within the intensive care unit and beyond its walls, has been explored. The place of handover in enacting care for patients, and amongst staff, has been described at the same time as it emerges as a complex, socio-material, situated practice countering an over emphasis on the agency of humans. Othering, both within and beyond intensive care, has been revealed. Multiple others, both as absences and as presences, have been shown to be performed in handover, just as multiple ontologies have been found to assemble in its practice.

The dynamic intra-actions made possible by the artefacts of handover, particularly the floating texts of the Wardwatcher Handover Report and paper towels, have been posited. The praxis of the anonymity of authorship in these texts, and the implications for responsibility through accountability, are highlighted. The possibility for handover, through a focus on the in between of social and material, to expose a process and a space for learning has been identified, and in light of the separated practices the potential for this to be inter-professional should be promoted.

In the final chapter these challenges of the enactment of handover and education are detailed and recommendations made on how these could be addressed.

Chapter 6 Conclusions and Recommendations

Handing

*Hand me over,
hand me down,
hand over hand,
a hands free life
in a hands on continuum.*

*Now, hands up,
I offer my hand,
a handful
to hand hold
your handiwork.*

*Take me in hand,
hand in hand.*

Handle with care.

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Introduction

Handover has been examined in this study, not in a humanistic, scientific, normative or mechanistic way, but with a difference. The relevant literature has been related to, in order to situate the words and images that are the data in the scholarly tradition, whilst at the same time identifying gaps and opportunities which exist in practice. This study also attempts to fill in some of these gaps and to develop themes and ideas to further practice and professional education and to inform the direction of future research. This text has been illuminated and informed by the narrative and discourses and materials and things enacting the messy, complex human practices of clinical handover in intensive care. Through the ideas of Foucault, then the development and (r)evolution of ANT, to the empirical philosophy of Mol, “the different forms of presence of material objects” have been foregrounded (Sorensen, 2009, p.11). Through these works a methodological framework and research philosophy for this study has been discovered. Although the case has been studied using an ethnographic approach, the resulting work is not a field report, as it takes hold of the theories related by Mol that “materials are actively engaged in the enactment of reality” and that “the knowledge incorporated in practices does not reside in subjects alone, but also in buildings, knives, dyes, desks. And in technologies like patient records” (Mol, 2002, pp.48-49). The theory developed by Mol that “ontology-in-practice comes with objects that do not so much cohere as assemble” has been present and applied throughout the analysis and the writing (Mol, 2002, p.150). How the systems and practices of handover hang together along with the artefacts and things of handover, “materials...actively

engaged in the enactment of reality”, as Mol has it (Mol, 2002, p.49), has been explicated. Throughout this work I have used *enacted* since, as Mol argues, “the term enacting leaves open who or what the actor is” (Mol, 2002, p.143).

So in this work I have endeavoured to answer these questions:

What does data say on these key themes?

1. How is handover enacted?
2. Where are the material and social forces in handover?
3. What are the clinical, professional and educational implications?

The data suggest that multiple worlds of practice exist in handover and, as Mol proposes “reality is distributed” whilst “ontology-in-practice is multiple” (Mol, 2002, p.96, p.157). Mol places atherosclerosis in this way: “The two realities, that of the artery and that of the patient, do not encompass each other: they are, rather, situated *side by side*” (Mol, 2002, p.80). From the analysis of the data handovers can also be framed in the same way, side by side.

We can also ask how might a multiple ontological approach influence handover and inter-professional practice and their underpinning education and pedagogy? It could also be suggested that we need new or different ways of talking about these. Different, perhaps even conflicting, professional assemblages, have been described in this work. The implications of these for practice and education also merit further exploration. By coordinating these different accounts of handover we may identify how each individual profession can learn from the enactments of the other (more *otherings*) rather than reaching for a simple resolution. The existing approaches to handover in the different professional groups are guided by the different pedagogical

approaches to the teaching and education of handover inherent in these separated activities. Where is the interprofessional learning on this? This examination of practice raises those differences of practice which might be harmonised by a collaborative educational approach.

In the data presented and analysed here the patient is objectified, and refracted, through these multiple worlds, multiple gazes. The complex networks, the thingly gatherings, which allow the overlap between the handovers are exposed. In this thesis, the practice of handover in the intensive care unit has been analysed, theorised and critically questioned. But others have written of different, yet familiar, circumstances long before critical care was conceived.

“This enclosed, segmented space, observed at every point, in which the individuals are inserted in a fixed place, in which the slightest movements are supervised, in which all events are recorded, in which an uninterrupted work of writing links the centre and periphery, in which each individual is constantly located, examined and distributed among the living beings, the sick and the dead-all this constitutes a compact model of the mechanism” (Foucault, 1997, p.195).

The geography of the intensive care unit and the intra-actions of those involved in the handovers studied are rendered explicit. The fact of confinement of the patient has been solidified. The panopticism of monitoring, observation and strict supervision has been revealed. The clinicians of the record, be it official or floating, have been identified. The dichotomy which is life and death is shown to be ever present. But this quotation, from Foucault, is not a description of what we have seen in these transcripts. It could be intensive care, but what Foucault

was describing the areas of towns with their houses locked up and quarantined during the plague in France three hundred years ago (Foucault, 1997, p.197). I am not attempting to “impose false coherence”, as Mol would have it (Mol, 2002, p.108), but I would encourage you to consider the cartography and praxis which Foucault describes and consider their similarities with intensive care as you have seen it in this work. It has resonance with the analysis which has located the material and social forces of handover involving artefacts, space, power and people.

“The system of handover in that context was rigorous with reports from syndics to intendants, and from them to magistrates and the mayor” (Foucault, 1997, p.197). The syndics are equivalent to the participants in this study. But unlike those taking part in intensive care handovers, the syndics are then involved in proscribed multiple other handovers between the inter-professional groups both within their *unit* and outside it, the latter being equivalent to the other specialists in the hospital and the health board. This provides ideas for changes to contemporary professional practice. As Mol considers “reality” may inform practice while “pragmatics in their turn shape reality” (Mol, 2002, p.183).

Yet there are differences between what has been found in this work and what Foucault describes which allow us to learn, and move forward, clinical practice (Foucault, 1997, p.197). Although he foregrounds *handover* and the artefacts which enact it (handover sheets, paper towels?), he does not accede to their potential agency. This is further developed in the section on future research.

And in the analysis it has been recognised that the person has been re-allocated as a number, a location, a diagnosis, a bed, an outlier. How to get

them back? This loss of the person is an issue to be explored further, as Mol says “is this practice good for the subjects involved in it?” (Mol, 2002, p.129).

This body of work and words multiple could now be left to speak for itself.

But I have been asked the question: “what am I going to do with it?” So here goes.....

Implications for professional practice

Mol confesses her astonishment that in clinical practice anything worthwhile actually happens: “Once we start to unravel ontology-in-practice there are no longer any stable variables. All variables vary from one site to another. The miracle to explain is, how, even so, practices somehow hang together” (Mol, 2002, p.143). Taking this, the shakiest of backdrops, some recommendations for practice can be spotlighted.

The first *thing* to be addressed is the multiple ontologies in practice which have been discovered. How to do this? Perhaps breaking down the physical and professional barriers could be a start? Mol’s suggestion of aiming for “blurred professional boundaries” could inform this (Mol, 2002, p.ix). And then what should be done with the ripples created in, and spreading out from, each handover? As there is an inevitable interference of these ripples around the intensive care unit from the multiple handovers I recommend that this is used explicitly to ensure a positive effect rather than a flattening or negative result. In practical terms the introduction of scheduled meetings of the charge nurse, consultant and long day trainee doctor after the morning handovers, and throughout the day, could start to address these issues. Congregating around

the whiteboard in the Doctors' Room would allow those enacting the different handovers to share knowledge, ideas and plans, and safety, with each other. This praxis has already been implemented in the research context but the impact remains to be researched and evaluated. This change in practice also has significant implications for research and education. The pedagogic implications of the relational assemblage of handover, yet another enactment, have been identified. This investigation of professional knowing by examination of the different ways of enactment in the real, and the potential, spaces of handover has realised that these configurations of professional knowing are different. The potential for collaborative learning, with movement between these divided handovers, may transform learning in handover. How these ripples enact has yet to be examined (Image 6.1).



Image 6.1 Ripples and interferences

From the data presented, and the literature reviewed, it is apparent that handover may be an emotional event and that there is a necessity for it to be utilised as a place where personal and professional support can be administered. This should be made explicit in curricula and the like.

Throughout the transcripts multiple *theys* are mentioned. Another practical objective to aim for is that in all documentation the clinicians with whom discussions about patient management have occurred are named and contact details recorded.

Major concerns have been raised through this research about the lack of accountability imbued in the use of Wardwatcher and the practices of working with it. This has been taken to, and discussed at, the Scottish Intensive Care Society Council and the system is being redesigned to include individual log in. On the subject of patient information, when this research project started the text on the whiteboard in the Doctors' Room contained the personal details of diagnosis and social behaviours (drugs, alcohol, blood borne viruses including HIV and Hepatitis C) for all of the patients. A side effect of the research process itself was to *make this familiar strange* to the unit staff and in an unplanned move these details have gradually disappeared from the board, although very occasionally they still reappear. Through discussions about this research in the unit (many during handovers), and in discussions around patients, the staff have started to consider the words and labels that they apply. This not only has implications for confidentiality but also for care.

Implications for professional education

In light of the analysis of the empirical data from this study I propose that attention is given to handover as a reflective space in the professional development of nurses and doctors and probably others. Handover is thus foregrounded as a potential educational space for all staff.

Learning from, through, about different handovers, including reinstating the patient as a person could work. There are multiple pedagogical implications for clinical educators such as supported debriefing of handovers. The different professionals attending each other's handovers could be a productive intra-action. And raising the patient to the surface as person: diaries, photos, knowledge of their life. The critical role of things, objects, official and marginal texts, in handover has been highlighted and deserves attention in any educational initiatives related to work-learning. Current educational practice involves medical trainees engaging in DOPS - direct observations of procedural skills. Handover, with its gathering of people and things is a sociomaterial assemblage that takes on particular energies and should be one of these processes, practices, skills. Sharing understanding of the working and enactment of handover, between professions and across the different spaces where it happens, could be achieved by post-graduate clinical staff and undergraduate students attending handovers involving other professional groups, including medical trainees joining consultant handovers

So much of clinical practice, particularly in intensive care, involves living with doubt whilst invoking action in this uncertainty. Trainee doctors can be heard *talking what they don't know* throughout this data. Having a senior clinician present at handover as an observer who then provides an immediate, intimate, informed debrief and feedback, as we do in the setting of high fidelity simulation could improve learning and education (Shippey and Nimmo, 2014).

A number of patient safety issues have been surfaced in this study.

Misidentification of patients results in significant adverse events. Lack of

temporal coordination of the movements of patients in physical beds and not the virtual beds on whiteboards and computers have been identified and described. There is potential to explicitly include the patient's name in the performance of the practice of handover, which could help reduce these risks.

Outliers, some of the orphans of acute care, add an additional layer of complexity in the relations of handover and they probably deserve a clinical, educational and research agenda of their own.

And finally...In some of the handovers the questions asked created learning and understanding. To include a questioning moment as part of the wind up of handover could be a useful turn. It may even be a necessity. There are multiple possibilities in developing this pedagogy. The outgoing staff could identify aspects of patient management and care from their shift and bring this to handover. The incoming staff can make this an opportunity to clarify fact and detail particularly in planning ongoing care and interactions with the others, the invisible present such as relatives, speciality consultants, primary care physicians and so on.

Signposting future research

The existing research only takes things so far. In a move beyond Foucault, Mol suggests that "The gaze moves: a gaze that ...follows objects while they are being enacted in practice. So the emphasis shifts. Instead of the observer's eye, the practitioner's hands become the focus point of theorizing" (Mol, 2002, p152). In a move between a pragmatic framing privileging numbers, to a relational ontology that describes events in terms of significant relations, Verran

“articulates those imaginaries as part of recognising the myriad hybrid assemblages with which we constitute our worlds” (Verran, 1998, p.252). The other hybrid assemblages of handovers to be explored include the newly admitted patient; the patient being discharged; consultant to consultant handover; across *boundary* handover; handovers in all of the other clinical contexts across healthcare. And all of these involving much more than just, although it is justifiable, meaning and communication. Materialism and agents, practicalities and materialities and events, although strange to many, should be made familiar. How the changing into a uniform, and the different types of uniform, and the putting on of name badges, enact handover could be researched. And Law has set out another empirical philosophy which could inform these studies “Practices enact realities including *collateral realities*” and “an ontological politics” (Law, 2012, pp.156-157 and p.165). Situating these approaches to the study of handover, and other clinical practices, could be informative.

This research should encompass the effects, and intra-actions, of the ripples from handover and the resulting interferences including what happens during ward rounds (Image 6.1). This multiplicity adds complexity to how handover is conceptualized. As has been suggested earlier handover involves multiple ontologies (co-)existing with each other. How we make that accordant, and not dissonant, is a rich vein for research.

In considering that after-handover event the ward round, with its different assemblages, this stands out as a practice unresearched. Paper towels appear here again. The bedspace nurses are often on a break when the ward round attends their patient. But the paper towel is still there, acting in their place

(Image 4.17). Verran has ascribed agency to land titles “Titles, as heterogeneous assemblages accomplishing particular transitions in the long and complex connection between particular people and particular sections of land, have agency.” Thinking of the paper towels through the words of Latour “we will not meet it by considering artifacts as *things*. They deserve better. They deserve to be housed in our intellectual culture as fully fledged actants” (Latour, 1999, p.214).

Some of the other actants of interruptions, such as bleeps, people and phones, have been identified in the data from this study. They are a significant presence in handover and likely deserve investigation in their own right. Their influence on staff and families in the enactment of clinical practice, including handover, is unknown and therefore a promising area for study.

Some of the practices of death and dying in intensive care have been revealed in this work. There have been previous studies looking at patients, families, relatives. But what of the staff? How are the nurses and doctors and care assistants and porters involved in the enactment of death? This surfaces another direction for research.

What is the effect on the treatment of patients who are barrier nursed and isolated regarding the physical presence of staff, where the enactment of closed doors, of personal protective equipment, of face masks and surgical hats, in distancing person from person, and all from the patient could be explored?¹ This is another potential avenue of research.

¹ “The sign above the bed stated in capitals: IT IS FORBIDDEN TO SIT ON THE PATIENT’S BED. His wife and three daughters, one a doctor, stood against the wall separated from him. He was dying. I sat on his bed and held his hand.” Research journal December 2012.

This work involves the localised practices of handover where the case is a single intensive care unit and it involves three distinct groups of staff. It has already been recommended here that further research into different handovers, between other clinicians located in this setting is desirable. But it cannot be assumed that the findings from this unique coming together of things, people and geographies can be generalised to intensive care in other units, in other cities, in other countries and cultures. The *issues* raised could help prompt discussion on, and enact, the detailed investigation of the socio-material in all of these other environments. And beyond intensive care? It has been made clear, throughout this work, that handover is an integral part of the clinical landscape across all of healthcare, indeed I have described it as *quotidian* and *ubiquitous*. It is likely that the findings from this case could, and should, inform further studies involving these multiple contexts of handover.

Conclusions

Handover, like so many other standard, established, quotidian, clinical practices including ward rounds, out-patient clinics and operating theatre lists, is a place and a time and a space for learning and education. This work researches the events and the assemblages of handover by engaging in socio-material studies to, as Fenwick puts it, in relation to education in schools, “reveal the minute dynamics and connections that are continuously enacting the taken-for-granted in educational events: the clothing , timetables, passwords, pencils, windows, stories, plans, buzzers, bubblegum, desks, electricity and lights- not as separate objects, but as continually changing patterns of materiality” (Fenwick, 2011, p.viii).

This work addresses how to account for the enactment of clinical handover in intensive care from a socio-material stance. It proposes that there exist multiple ontologies, at multiple levels, in handover in intensive care. These different ways of understanding reality whilst, perhaps counter-intuitive to the clinician, are problematic regarding patient safety, quality of patient care, and for professional practice and inter-professional education. Attention has been given to the educational impact of these findings which include life long learning across the professional boundaries, and making sense of understanding each other. The outstanding pedagogical implication is to sensitise staff and students to the materiality of clinical practice, such that materials are actively engaged in the praxis of handover, and that matter really matters in the intra-action with patients, relatives and staff. That is foregrounded by this telling of handover in intensive care.

Final Consultation

*She told him he was normal, free to go;
the world's your oyster-she described it well:
something soft and vulnerable in a shell,
prone to contamination, slow to grow
its random irritation into pearl.*

*Discharged, released, induced to pick things up
where he'd left off, as if his dwindling cup
had been refilled with light to wash the world.*

*He hesitated, conjured fantasies
of what it would be like to walk away
into before, revisit the places
and the faces he'd known previously,
framed in their meanings from another time,
return to normal, diagnosis: fine."*

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Appendices

Appendix 1 Participants in the research

Ages and specialities are included

Handover 1 Charge nurses Jane 34 to Heather 35

Handover 2 Trainee doctors Jackie 26 acute physician to Susan 25 emergency medicine

Handover 3 Trainee doctors: Alison 24 anaesthetist to Ruth 26 emergency medicine

Handover 4 Trainee doctors Sayeed 24 acute medicine to Neil 26 anaesthetist and Joan 30 intensivist (registrar)

Handover 5 Trainee doctors Ian 25 emergency medicine to Angus 26 anaesthetist and David 27 anaesthetist (registrar)

Handover 6 Bedspace nurses Mike 27 to Callum 28

Handover 7 Bedspace nurses Nancy 43 to Julie 48

Handover 8 Charge nurses Gavin 37 to Heather 40

Handover 9 Trainee doctor Ben 26 anaesthetist to trainee doctor Emily respiratory medicine 29, Brian 27 anaesthetist, consultant Steven 38, consultant James 47

Handover 10 Trainee doctors Allan acute medicine 26 to Ahmed emergency medicine 26 and Richard 31 intensivist (registrar)

Appendix 2 Ethics consent form

UNIVERSITY HOSPITALS DIVISION DIRECTORATE OF CRITICAL CARE Western General Hospital Crewe Road, Edinburgh, EH4 2XU Telephone 0131 537 1666 Medical and Associated Services	
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Doctorate in Education Research Project CONSENT FORM

Title of Project: An exploration of the nature and narrative of handover in Intensive Care

Name of Investigator: Graham Nimmo

Tick Box

- I confirm that I have read and understood the information sheet for the above study.
- 2. I have had the opportunity to ask questions and have had these answered To my satisfaction
- 3. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason and without my rights being affected in any way.
- 4. I understand that any information which I provide is confidential, and that all efforts will be made to ensure that I cannot be identified in any project reports or in any published materials.
- 5. I agree to my handover being audio recorded on the understanding that this will only be used for the purpose(s) set out in the information sheet and that the recording will be stored in compliance with the Data Protection Act 1988.

Participant Name

Signature

Date

Name of Researcher

Signature

Date

Appendix 3 Wardwatcher data

Admission comments: anonymous

1. Traumatic skull fractures and subdural haematoma
2. Diffuse Bcell lymphoma
3. Significant PR bleed: heavy smoker
4. Admitted to ARU with respiratory failure
5. Pneumococcal meningitis
6. Found collapsed; off his feet over last week
7. SAH
8. Admitted with DKA
9. 52 female background asthma
10. Spina bifida with VP shunt: admitted with lethargy.
11. Lower respiratory tract infection
12. Lymphoma
13. Acute asthmatic attack
14. Background ITP and syringomyelia. Posterior fossa decompression.
15. CT SAH. Sudden onset headache and vomiting.
16. Known to Home Vent team with myotonic dystrophy.
17. Admitted following hemiparesis and collapse.
18. Bibasal pneumonia, septic shock
19. Admission to QMH with 9 days headache and vomiting. CT bilateral SDHs.
20. Admitted with 3 day history vomiting and epigastric pain.
21. Motorcycle vs car RTA

22. Admitted QMH with vertigo, vomiting, unsteadiness. CT head cerebellar infarct.
23. Large and small bowel infarction and alcohol excess.
24. Admitted from theatre following laparotomy for perforated DU, smoker.
25. 71 year old female
26. Respiratory arrest following choking on medication.
27. 60 year old admitted with severe metabolic acidosis, morbidly obese
28. Admitted to ICU post emergency laparotomy for perforated caecal cancer. ADLs: walks with stick, manages stairs.
29. Admitted to ICU from Theatre post emergency laparotomy for perforated DU AS NO SURGICAL HDU BEDS.
30. 2 months history of blurred vision and headaches. Collapsed GCS 3.
Admitted from ARU following peri-arrest ? aspiration pneumonia
31. Admitted with type 1 respiratory failure and alcohol excess.
32. Admitted ? sepsis post percutaneous nephrolithotomy.
33. Colovesical fistula secondary to diverticular disease. COPD, palliative repair.
34. Admitted post op following cystoscopy and bladder washout
35. Massive haemoptysis secondary to acute exacerbation cystic fibrosis.
36. Admitted to SJH after 2 days headache, vomiting, fever. Transferred for EEG.
37. Coughing blood, collapsed, resus call, theatre.
38. Fell off wall 15 feet. GCS 3 at scene and A+E. Previously fit and well.
39. Gunshot wound to left temporal region. GCS 3 at scene.

40. Anterior resection for rectosigmoid polyp. Post-op NSTEMI. Admitted for level 2 care post op.
41. Background ovarian cancer: presented ARF and hyperkalaemia due to ureteric obstruction.
42. Home ventilation patient secondary to Beckers muscular dystrophy.
43. Admitted for laparoscopic anterior resection for rectal cancer.
44. Coiling of basilar tip aneurysm.
45. Laparotomy and hemicolectomy for ileocaecal obstruction . “Mobilises with hoist”.
46. Admitted with reduced GCS and seizures.
47. Initially admitted upper respiratory tract infection, now reduced BP.
48. Admitted with reduced GCS and seizure, CT shows sagittal sinus thrombosis.
49. Elective laparoscopic resection sigmoid carcinoma.
50. Dropped GCS post-coiling of left internal carotid aneurysm.
51. Nothing written: discharge screen 44 year old lady presented with headache and nausea and reduced GCS.
52. Admitted via ARU with vomiting and diarrhoea for 2 days
53. Admitted with epigastric pain
54. Admitted with 4 days anuria
55. Admitted to A/E in status, pyrexial, WBC 26.4. “Uses wheelchair; epileptic”
56. Admitted from Ward 8 with developing neutropenic sepsis following chemotherapy for lymphoma.
57. Traumatic R ASDH

- 58. COPD. Laparotomy.
- 59. HIV and Hep C secondary to IVDU. Low viral load.
- 60. SBO due to Crohn's disease.
- 61. 3 weeks headaches and vomiting
- 62. D and V. ACEIs. Renal failure.
- 63. Autonomic seizures
- 64. HONC
- 65. Admitted from Ward 8 with atypical pneumonia possibly fungal
- 66. Recent URTI, increasing pain in throat, hoarse voice, unable to swallow saliva
- 67. Acute coronary syndrome (SOB and ECG changes)
- 68. Admitted from 118, collapsed at home, community acquired pneumonia, acute renal failure, peripheral oedema, HIV pos on retrovirals.
- 69. History bladder cancer, admit post op cystoscopy and washout.
- 70. Home vent patient motor neurone disease.
- 71. Severe CAP
- 72. Anterior resection (no beds available in Ward 58)
- 73. Admitted to ICU for ventilation and bronchoscopy due to LLL collapse.
- 74. Found collapsed outside pub. GCS??? CT: a few frontal contusions.
- 75. Polish RTA pedestrian vs bus.
- 76. Severe septic shock secondary to perianal abscesses.
- 77. Periorbital cellulitis plus right extradural and subdural empyemas.
- 78. Cystic fibrosis patient. BMI <19, PEG inserted
- 79. 54 year old gentleman with myeloma who had stem cell transplant 1997

80. Admitted from Ward 8 due to desaturation and increased temp, new diagnosis of high grade lymphoma
81. TBI and intraventricular haemorrhage
82. SAH on 20 Jan and likely seizure in BGH transferred to DCN
83. SOB at rest and on exertion.
84. Bladder Ca with hydronephrosis kidney.
85. Admitted post UGIE following banding of oesophageal varices.
86. 42 yr old cyclist vs car RTA, 40mph went over bonnet.
87. Admitted following evacuation of basilar artery thrombosis.
88. Patient speaks Spanish only (Dx CAP: my insert).
89. Nil
90. SAH: known AVMx7
91. 81 year old man, day 2 post laparotomy and Hartmanns following anastomotic leak following anterior resection.
92. Admitted from theatre: underwent repair of rectal stump blow out.
93. Assault. Emergency admission for perf bowel and bladder
94. 45 year old complex PMHx Crohns, mutiple laparotomies
95. ASD
96. Known COPD
97. Elective colonoscopy complicated by caecal perforation
98. 48 years old previously fit and well: AVM
99. Found by friend: SAS reported slurred speech and both wrists superficially cut.
100. 60 yrs background COPD on LTOT, MS, DM, CAP.